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# Medical Times

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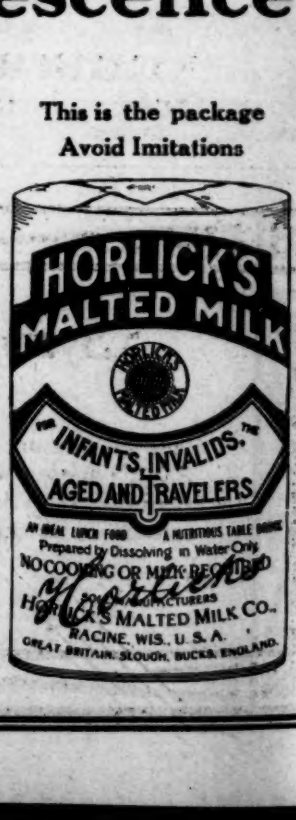
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## General Scientific

### "A MECCA OF MEDICINE FOR THE FUTURE."*


FREDERICK TILNEY, M.D., PH.D.

PROFESSOR OF NEUROLOGY AND NEURO-ANATOMY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY.

New York


It will be asked, no doubt, where and what this Mecca of Medicine of the future is to be. These questions are important to all of us assembled here today, and also to many others who have their chief interest in the medical profession. They are questions which touch our lives profoundly; they search out the kind of men and women we are or hope to be, and their answer formulates a motive of impelling force.

Where then is this center for the future ideals and development of medicine likely to be? Its location may be open to some question. It would be difficult to find a more favorable place than in this nation, which has contributed so freely that the aspirations and ideals of men might live in fact, which has given so abundantly to secure the blessings of liberty, which has fought on many battlefields in the just causes of humanity and which today is marching in such spirit as never crusaders marched before, not the standard bearers of a single faith, not with thought of selfish gain, but for all faiths, for all peoples and, God grant it, for the last time to reassert the will of freedom against the greed of tyrrany!

It is not fatuous optimism to believe that this country is the most fitting place for such center of medicine, nor is believing this to sin on the side of vain glory. However much the idea may seem to be the product of overardent patriotism, looking at it earnestly, we shall see it is nothing of the kind.

It makes one of the many demands which call upon us to prepare ourselves now for the even greater struggle after the war. To us it comes as a summons to a duty we should not neglect.

The reasons for this are many and easy to discern.

During the past four years war has swept the world with a power to destroy more complete than ever before in history. If it has revealed a ruthless plan which menaced the race, at the same time it exposed a nation which has lost its mental bearings. The Germans for many years have been laboring under a delusion of grandeur. They have been obsessed by the conviction of their own racial superiority. This eventually led to the paranoid idea of world dominion. It has been part of their unfortunate heritage as a people to believe in the righteousness of might. They were even more unfortunate because they have long been under the influence of rulers who, by cultivating this belief, exploited a national weakness. Their most serious misfortune is their present ruler. Prepared for the coming of a warlord by their successful aggression in the Franco-Prussian war, the German people were quickly infected by the expanisve ideas of the new ruler. He on his part, at once began to weld the old fetters of feudalism and soon had so controlled public opinion that the German standards of judgment in morals, religion, science, art and politics were no longer matters of independent decision. Our former ambassador to Berlin, Dr. David Jayne Hill, epitomizes the tendencies in Germany when he says that: "Like money put out at usury, power in Government grows with astonishing rapidity. When it is both concentrated and undisputed as in the case of imperial absolutism, it soon becomes irresistible. No better example of this rapid centralization of power can be found in history than the growth of Kaiser William II's personal control not only of German action, but of German thought." In his instructive reference to the *Verdun Prize* this celebrated student of Germany gives a striking illustration of the method by which the Kaiser gained control over the universities. The prize referred to was annually awarded for the most meritorious historical work of the year. In 1894 the Academy of Berlin unanimously awarded it to the famous historian Von Sybel for his work on the "Foundation of the New German Empire." To the amazement of all, the young Kaiser drew his pen through the name of Von Sybel, awarding the prize to a Heidelberg writer for an inferior work on the Great Elector, one of the Kaiser's ancestors. Gradually, under such influence, the faculties of the universities and schools came to wear the King's coat, for in this way only was advancement possible. But it did not stop with the subordination of learning. Soon it extended to the press and church. In time, baited by the avaricious expectations of German world-dominion, commerce and finance came into the net, until at length allegiance to the Kaiser on the farm and in the

* Delivered at the opening of the college year of 1918 at the College of Physicians and Surgeons.

factory, in the banking house and on the sea, meant power to the arm that was to strike the swift overwhelming blow for alluring plunder. In this attitude we see them posed to strike for the pre-destined day. Infector and infected alike charged with the same venom, filled with Prussian lust for power!

The blow that fell was neither swift nor powerful enough. It did, however, strip off the mask and finally arrayed against the transgressors the outraged humanity of most of the world. In this way two great forces have, for more than four years, been engaged in a process of irreparable destruction. Nearly every line of human activity has been turning its product into the vortex until the waste in all materials and intellect has become stupendous. In the end, Germany, vaunted the most efficient of nations, has shown herself to be the most destructive organization in history. Through forty years, while establishing German supremacy in the pursuits of peace, the government built parallel to this, and deliberately planned to use, the destroying engine of its military power. This power has swept German commerce from the seas, decimated her manhood, filled her cities with the maimed and blind, prostrated her science and industries, and brought her to spiritual as well as financial bankruptcy. Nor is this all! Had the ruin been confined to Germany alone, the evil record might have been less onerous to bear. But the destruction which Germany begot, has drawn all of the other productive nations into the disaster. There wealth, and man-power, their intellectual efforts and enterprises which go to make up civilization have been diverted into the conflagration. Years of readjustment and recuperation lie ahead, years of we know not what extreme tests upon our faith, our courage and our tenacity to adhere firmly to the right. These are the times for which we must now begin to prepare ourselves.

There can be no doubt that the struggle in Europe will be severe. The entire effort of every European state must be concentrated upon the rehabilitation of the essentials of life. The higher pursuits of civilization must for the time at least stand aside, or bend their energy to the simpler purposes. The security and plenty upon which German medical science grew to be the commanding figure in the world of medicine have gone. Not for a long time will the Germanic capitols be the centers of medical learning which they have been in the past. This distinction must pass into other keeping. France, henceforth the symbol of heroic sacrifice and salvation, has given nearly all she had, and being impoverished by the noble gift needs time to replenish her resources. England, the bulwark of civilization throughout the struggle, has stripped her empire, and for years to come will be handicapped in maintaining and advancing science. This is particularly true in medical science, for Great Britain early in the war encouraged the mobilization of the entire medical profession, and permitted medical students to serve with the colors, in this way depriving herself of a large annual increment to the medical ranks. Whatever handicaps we may labor under due to our present or future sacrifices, we shall inevitably occupy the point of vantage in this regard as well as a position of responsibility. We can understand how it must be our duty here in America to carry on the constructive advance work in medicine while the nations of Europe struggle through their period of reconstruction.

But there is a still more cogent reason why we should accept this responsibility, namely, because we are now ready and able to take the place we should hold in medicine. The war has brought about far reaching changes in the country. It has, as Lord French says, made a nation of us. Under the great leadership of President Wilson the whole essence of our destiny has been crystallized, and we move forward unified by a national consciousness, no longer North or South, or East or West, but one people irresistible in the resolve to accomplish our purpose. The war has brought about far-reaching changes in medicine. We also have gained a national consciousness.

The country no longer regards medicine merely as a learned profession, but is coming to consider it one of the essential industries. Sound public health is a necessary element in the will to victory. The civil population unduly enfeebled by disease or discouraged by neglect cannot be expected to support a winning army. All signs give assurance that the government in its wisdom will provide adequate medical attention for the people, prevent relaxation in the safeguards against epidemics, and restrict the spread of disease to the limits normal in peace-time. In another critical relation the efforts of the medical profession have become indispensable to final success. The vast detail of the health of an army is in the hands of its medical corps. Failure here is almost as serious as defeat by the enemy. The selection of the fit and the rejection of the unfit, the supervision of sanitation, the prevention of disease, the stamping out of epidemics, the early detection of the physically and mentally unstable, to say nothing of adequate care and reconstruction of the sick and wounded are matters of vital importance to troops in the field. The war has shown us the possibilities of medicine carried out intensively in all its branches. From these lessons we have gained more cohesion as a profession. We understand now more fully our obligation to civil communities, we recognize our opportunities for greater public service and see the value in a more complete system whose development will better guard the public health. In attributing these changes to the war, it is but just to indicate that they are in large part due to the efforts of Surgeon-General Gorgas. He has given us a demonstration of the efficacy of national organization in medicine. The organization of his own department is one of the real achievements of the war. It is widely admitted that the Medical Corps of the United States army is without peer. The public knows too little of its development and management to appreciate the efficiency of one of the most potent forces fighting for civilization today. Over twenty-five thousand physicians have been called in from all branches of private practice and given special training for some particular work in the army. Provision has been made for the psychological testing and grading of troops in training; specialists have been developed for testing the flight capacities of aviators. Every department and sub-department in medicine is manned by physicians who have had special courses of intensive training. Each of the larger groups of diseases is provided with its special base hospital, while looking into the future plans are already perfected for the rehabilitation of the maimed and blind who unfortunately will return in increasing numbers to our shores. In a word, every contingency that a far-seeing intelligence might anticipate has been provided for in a scientific manner. With an organization in all branches of the war department such as General Gorgas has built up, the United States army must certainly be invincible.

Alive to the significance of our position, we recognize that American Medicine can no longer be an overseas province on the medical map. We are ready to make it what it should be. Our tradition leads us to feel that we shall succeed. Our practical instinct compels us, how

ever, to take stock of our qualifications. As to one of our assets there can be no dispute. American medicne is supreme in surgery. In this most direct practical handicraft of the healing art, it is probable, we have no equals. American Surgery has won its repute not alone for its ingenuity and sound adherence to fundamental principles, but quite as much through the brilliancy of its technique and enterprise. It has produced a surprisingly large number of surgeons noted for their exceptional skill in general and highly special regional procedure. The number of these is still growing. In fact no other country possesses so many thoroughly trained surgeons who may be considered competent to assume the responsibilities of major operative work. The dominant position of America in Surgery is witnessed by the steadily growing influx of foreign surgeons in the past few years to the famous operating amphitheaters of this country. Our own surgeons understand that they have become the instructors in their branch.

Another valuable factor ready to our hand is the diagnostic clinic or group idea in diagnosis and practice. This is essentially an American conception and its successful application as a scientific method for the practice of medicine is an accomplishment in which we have a just national pride. Not only is it the most efficient way of bringing the ailments of each individual patient under complete medical review through examinations by experts in each particular department, but it confers a further benefit upon the patient by furnishing the best medical advice in the most economic way. To the physicians engaged in the work it serves as a mutual inspiration and a constant incentive.

In the matter of equipment we are rapidly increasing the number of modern hospitals throughout the country. These institutions have the advantages of modern management which conceives of the hospital as an educational factor as well as a place to care for the sick. The idea is becoming more generally accepted, that a hospital, especially in large centers, which has no teaching facilities does not discharge its full duty to the public. The personnel of the profession is fortunate in its admixture of nationalities and races. This cannot fail to be ultimately advantageous as it tends to catholicity of viewpoint and furnishes a variety in methods of approach.

The American system of medical education is conspicuous among our assets. It has an efficient organization which under the guidance of State Boards and certain large national associations has effected a standardization of medical instruction. This gives a well-rounded training in all branches of medicine. The fifth hospital year, already instituted, is designed to furnish a finishing course in practical work. During this period the student will live in the hospital, gaining clinical experience under the direction of resident instructors. The establishment of separate facilities to increase the opportunities and requirements of post-graduate instruction in medicine is receiving serious consideration. Full time clinical professorships as proposed will materially advance the interests of research in the clinical branches and provide more time for teaching. Medical research has had an unprecedented growth in recent times as evidenced by the development of special institutions for the intensive study of the human body and its diseases. Notable among these are institutes for the investigation of cancer, tuberculosis, mental disorders, the development of the body, the anatomy of the brain and general experimental medicine. In connection with these institutes the opportunities for post-graduate teaching have been much enhanced.

We must not, however, neglect the other side of the question. We have our defects The most obvious of these, perhaps, is that we have permitted our vision to become near-sighted and locally introspective. Because of this limited view, we have gained no sense of the possibilities and proportion of our mission; it would even seem that we had no realization of a mission at all. A complacent isolation of the larger medical centers has cultivated an exclusiveness which does not promote mutual understanding, or inspire the confidence which engenders the spirit of progress. There has been in consequence, a lack of broad conception and comprehensive organization. Our natural impetuosity, our desire for quick results have made us intolerant of delay and often hasty where patience is more needed as a commodity than as a virtue. We have had too little esteem for our own achievements and an overweening regard for foreign work, especially of German stamp. This is all the more discomfitting since the quality of German production has fallen off in the past fifteen or twenty years. It may now be seen how much of the mass of German medical literature was part of the ambitious scheme of exploitation which has sapped so many good things of their worth and sincerity.

These defects, although serious, should not retard us. Such is not the American character, as we know from recent examples. When the call for men came from France, our response was not the difficulty of drafting, equipping and transportation, but putting all obstacles aside, we have sent an army which is well on its way to final victory. Let us be convinced that there is something which must be done, and its accomplishment is assured. When the conviction is established that we owe this duty to medicine, America will indeed become a new medical center.

It may be that the first step to secure this end will be a federation of American medical colleges and institutes. A council representative of these institutions would cooperate in the interests of medical education and medical science. If the satisfactory diagnosis of the individual patient requires a group of diagnosticians, how much more do the profound and baffling problems of medicine demand large groups of special workers for their solution. Coordination of investigation might be carried to a high level of efficiency by this intensive cooperation in medical research. The distinctive advantages of each medical center would not then be matters of local reputation but part of the national endowment in medicine. The large cities and other noted medical localities, making their contributions to a common cause, would attract to this country a vast number of the seekers for medical knowledge who formerly would have been found in the capitals of Europe.

It would be difficult to estimate the impetus which such a combination would impart to the newer, important trends in medicine. The influences of civic interest are becoming continually stronger because medical supervision is proving itself indispensable in many fields of community life. The well-trained physician of the future must be versed in the requirements of public service.

Preventive medicine particularly is destined to undergo much expansion. To its many present activities others equally necessary will be added. Among these might be mentioned the need of medical registration for the detection of disease in its incipience. Those connected with draft exemption boards have been astonished at the inroads into possible military effectives made by preventable diseases or disorders curable in early life.

Industrial medicine will soon have a field of its own. The health of operatives is calculated as an essential of efficiency, and medical departments have already been installed in a number of large corporations.

Public mental hygiene is an urgent national problem which must engage medical attention more seriously in the future. The significance of insanity as an economic loss will be realized by the fact that one-third of the entire budget of New York State is annually appropriated for the care of the insane. Under the guidance of the National Committee for Mental Hygiene a nation-wide investigation is being conducted in order to determine the prevalence and causes of insanity. The Committee has already done much to improve the care of the insane, and has stimulated a real interest in the effort to reduce the prevalence of mental disorders. Feeble-mindedness as a burden to the community has assumed such proportions as to necessitate the appointment of a special commission for its management in this state. The government attaches such importance to this problem that it has called one of the most distinguished physicians of this country to the chairmanship of the Committee.

The necessity of medical cooperation in court and prison matters has become apparent. To distinguish between the feeble-minded, a psychopathic delinquent on the one hand, and the criminal on the other, to differentiate between the necessity of therapeutic and punitive measures in each case and to study the pathological factors in the development of the criminal are necessary functions of the state.

If the country is to avail itself of the obvious advantages of universal military training after the war, military medicine must be still further developed in the colleges. It seems advisable that permanent courses in military medicine be introduced into the curriculum of medical schools.

These higher requirements of medicine make unusual demands upon those of us who are working in this field today. Yet, only as we devote ourselves with intelligence and redoubled energy to our duties will it be possible for us to reach the object to which we seem destined by circumstance. In so large an undertaking the work is not ours alone. The nation already begins to understand our purposes. When it appreciates the full importance of our relation to its welfare we shall, as a recognized economic necessity, have its liberal support. It is especially necessary in all parts of the country, that those who have the interests of medical development in their keeping shall make their efforts decisively constructive. In the future, no doubt, a reliable index to the intelligence of a community will be the degree to which it has mobilized its medical resources.

If our eyes seem fixed on the future it is because we understand that although civilization must be defended against the ravages of war, it owes its continuance and growth to the security of peace. We remember at what cost we delayed in preparing for war. We are loath to make the same mistake again and would prepare in time for the severe burdens after the conflict is over. Education, the surest guarantee of social stability, should be the subject of our most earnest attention. How much the events of the war have converted public opinion in England to the belief that the future of the nation depends upon the better education of the coming generation, has been shown by the reception accorded the Fisher Education Bill in the House of Commons and in the country. The cardinal features of this bill are the continuation of elementary education for all children and the establishment of secondary education for girls and boys on a national basis. It also provides increased emolument and pensions for teachers, in this way aiming to bring into the teaching profession and retain there the brains of the country.

We should cooperate with the Government to prevent any unnecessary interruption in the work of our schools and universities, and urged that all institutions of science and advanced learning shall be stimulated rather than curtailed in their efforts. "Win the war first," says Lloyd George, "but when peace comes I don't want the naton to be taken unawares." There must be healthier conditions in the workshops and more attention to the schools. There are disturbing symptoms all over Europe which those at home will be wise to note and provide against. Let us take heed in time," he continues, "and if we do we shall enjoy settled weather for the great harvest which is coming when the fierce heat of summer now beating down upon us in this great war is over and past."

Let us in America also take heed of the demands for national health, both economic and intellectual and being sure that the lamps of learning are the lights of the future, let us keep them bright.

We are not unmindful of the supreme task in hand. A few days ago we made a new consecration of our strength and renewed the pledge that we and our allies by all means in our power shall destroy the German fabric of ruthless force. It is still a considerable distance to the Rhine and inner Germany. These, nevertheless, are our destination. No human resistance shall hold us back. By force of arms we must crush out vandal militarism for in this way only is Germany capable of understanding that the judgment of the world is upon her, and by such means alone is it possible to re-establish peace with liberty and justice. We already know the cost. Even while we glory in the achievements of our troops and colleagues abroad, we cannot shut out from our eyes the sight of those who have fallen. As their number increases courageous sorrow will fill many homes. Little which may be said will bring consolation here. In silence we may pay our tribute of veneration and take solace in the fact that those who die go forward to join the invisible army of Washington and Lincoln whose undying spirit in the cause of liberty is the vanguard we follow.

This present occasion marks the opening of another college year. To those of you who come among us for the first time we extend a cordial greeting. We understand, as you must also, that this is a moment full of deep significance in your lives. You have elected to follow a course whose chief incentive is service to others; to make this of value requires long and intelligent preparation. If you take full advantage of this discipline you will gain a possession of lasting satisfaction for yourselves and of inestimable benefit for your fellows. In the belief that you will make such use of these opportunities we heartily welcome you today.

Many of us, who have already spent much time together here, meet again with fresh enthusiasm and devotion in our chosen work. We cannot fail to experience a new inspiration as we come to realize the broader fields of medicine upon which we are about to enter. It is not, however, in medicine alone that America looks to the future. An era of expansion in all our activities and in our sphere of influence is in sight. But the day to which we look has none of the German taints of avarice for the motives which raised the nation to a high place of esteem, the sacrifices which have ennobled the republic will increase our capacity for service to mankind. Again, as in our past, after the wounds of another great war, that day for us is to be one of justice and without malice. Every calling has its allotted task.

The obligation of the medical profession is clear, and some portion of it rests on each one of us. The materials are ready and only await assembling for the creation of a new era of medicine. May we have the vision to see the opportunity, the courage to accept the responsibility, in this vital hour of medical history, when American medicine steps forward to fulfil its duty to the world.

## ECTOPIA OF THE URINARY BLADDER IN AN INFANT.

J. EPSTEIN, M. D.,
New York.

Extrophy or ectopia of the urinary bladder is a rare congenital malformation. This distressing deformity is the result of an incomplete closure of the ventral body wall and a failure of the normal formation of the urogenital system. At the dawn of embryonal development, after the three primary germ layers have formed, the lateral parts of the mesoderm split transversely into two equal layers; the outer one unites with the ectoderm to form the somatopleure, and the inner unites with the endoderm to form the splanchnopleure. The body then begins to assume some shape and form. From the flat embryonal structures which lie in the embryonal area an infolding begins at the periphery to form the body framework. The infolding continues until there are formed two tubes, one within the other. The inner tube, made up of the splanchnopleure, gives rise to the alimentary canal, while the outer tube, which is made up of the somatopleure, forms the body wall. Union of the outer embryonal tube which makes up the body frame takes place along the median line on its ventral surface. The wall of the body cavity is thus joined or seamed together along the median line of the thorax and abdomen. The line of junction of the abdominal wall is structurally of less resistance than the rest of the body and is therefore occasionally marked by umbilical and epigastric hernias, or by a diastasis of the recti muscles. Imperfect development of the body wall, or a failure of the proper closure of the body cavity may occur at the line of junction and give rise to slits and clefts of various degrees. A cleft in the maxillary region causes harelip and cleft palate. A fissure may occur along the sternum and divide the thorax in two equal parts. A cleft in the cardiac region will expose the heart or give rise to a pulmonary hernia. A slit in the lower abdomen may occur and cause an extraversion of the bladder. In most cases of abdominal clefts, the process extends to the organs lying behind the wall. A cleft in the hypogastric region usually involves the bladder, urethra, and the pelvic girdle, so that the posterior wall of the bladder protrudes through the abdominal slit and the urethra is open on its dorsal surface, exposing the grooved floor, as in the following case of congenital ectopia of the bladder:

P. B. is a boy five months of age. Pregnancy, birth and later general development were normal. He is the second child of young, healthy, Polish parents. The first child is well in every way. There is no history of chronic disease or malformation in either family. No consanguinity in the parents. The child came to this world with a cleft in the lower abdominal region through which the posterior wall of the bladder protrudes and the kidneys empty themselves. On examination is seen a square, red, corrugated, fleshy mass which occupies the space between the umbilicus and the symphysis pubis, as shown in Fig. 1. It is 3 x 4 cm.

Fig. I. Ectopia of the bladder, epispadias, bilateral inguinal hernia, baby 5 months old.

in diameter and extends well above the surface of the abdomen. From the lower part of the dislocated bladder the urine wells up, keeping the parts moist and excoriated. The penis, except for the glans, is rudimentary and presents a condition of complete epispadias. There is a bilateral inguinal hernia. The testicles are in the normal position. The rest of the physical examination shows a healthy, well developed child. An *x*-ray of the entire urogenital tract and the pelvic bones could not be obtained because the child succumbed to gastroenteritis a few days after it came under my observation.

The diagnosis of extrophy of the bladder is comparatively simple. It mostly occurs in male children without regard to race or age of the parents. The abdominal cleft with the protruding red mass which is constantly moist, the epispadias or the cleft in the clitoris and labiæ, all point to the proper diagnosis. As a result of intra-abdominal pressure and the cut in the anterior wall of the bladder, the exposed organ is everted and protrudes above the surface of the abdominal wall. The prognosis is poor. The condition predisposes the child to infection of the urinary and intestinal tracts. Many die in infancy, some live to childhood, but few reach adult life. Treatment consists in a plastic operation, or the transplantation of the ureters into the rectum, making that part of the gut serve both as a bladder and intestine. Complete absence of the bladder, or a reduplication of the bladder or a partition of the bladder may occur. Some of these malformations are difficult of diagnosis and incompatible with life.

Why did this child come to this world an incomplete, imperfect being? What secret, evil forces have interfered with the normal embryonal development? What pathological processes have overruled the eternal laws of nature which tend always to reproduce the human species without deformities or malformations? There is nothing definitely known to account for nature's errors. All the embryonal and fetal processes of devel-

opment and formation are so hidden from the view of men that any digression from the normal remains a mystery.

Though the real causes of intrauterine malformations are not known, they may be divided into two groups according as the pathological processes may be intrinsic or extrinsic. Intrinsic abnormalities reside in the germ cells. Either one or both of the sexual cells entering into union may carry an active abnormal process, or the male and the female germ cells may be normal but they unite abnormally, or perhaps this particular copulation may be mutually incompatible. Some special unit characters or malformations are inherited, either from an immediate ancestor or from a remote generation, giving rise to atavism or reversion. In the malformation of extrophy of the bladder where the genital organs are rudimentary and malformed, and only a few of these patients reach adult life, the possibility of hereditary transmission of the pathological processes may be eliminated because reproduction is hardly possible. The deformity must then come either from some primary abnormality of the parental germ cells, or from a faulty union of normal cells, or from a developmental error in the course of construction of the body framework. Extrinsic influences may be the cause of this abnormality. Maternal infection, traumatic injury to the uterus, disturbances in nutrition and oxygen supply to the fetus may tend to produce deformities and malformations. Pathological conditions of the amnion may exert a damaging effect upon the fetal development and give rise to various malformations and to clefts in the anterior thoracic and abdominal wall.

The primary developmental disturbance may be in the urogenital tract and the slit in the abdomen may be compensatory to the malformed bladder, thus providing an easy and ready outlet for the urine through the abdominal opening. Whether the primary malformation is in the bladder or in the abdominal wall and the etiology due to intrinsic or extrinsic abnormal processes, the child comes to this world unprepared to live, yet not ready to die. The condition is beyond proper repair and the child exists for a shorter or longer time until some intercurrent disease relieves it of its troubles.

222 East Broadway.

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## GARLIC AND ITS THERAPEUTICAL USES.

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Garlic is the bulb of *allium sativum*, of the Liliaceae family, native of the East and cultivated from the earliest ages. The stem rises to the height of about two feet, is unbranched and bears at the top, an umbel of whitish flowers, mixed with many small bulbs. The leaves are grass-like, obscurely keeled and not fistulous like those of the onion. The bulb, which is the part eaten, consists of about twelve to fifteen ovate-oblong cloves or subordinate bulbs. It has a penetrating and powerful onion-like odor and astringent taste. It owes its medicinal uses to the volatile oil, which is allyl sulphid.

Oil of garlic or essence of garlic, chemically called allyl sulphid, is obtained from the bulb of *allium sativum*. It was used as a medicament long before the time of Galen.

The chemistry of allyl sulphid, the chemical formula of which is $(C_3H_5)_2S$, shows it to be a derivative of allyl alcohol and is the most important thio-ether of a divalent alcohol radical.

Allyl sulphid is obtained by distilling the garlic with the vapors of water. It can also be obtained by synthesis, by treating allyl iodide with potassium sulphid, viz:

$$2C_3H_5I + K_2S = (C_3H_5)2S + 2KI$$

It has a colorless to a yellowish color, is heavier than water, has a very penetrating odor, is but slightly soluble in water, but in addition to other vegetable constituents contains from 50 to 60 per cent. of mucilage and 20 to 25 per cent. of essential oil.

Galen claims that the use of garlic was preferred to that of aromatic condiments. It was used a century ago as an "Alexipharmac," a medicine neutralizing a poison. It was specially employed as an anthelmintic.

The common people made great use of it in the treatment of ascarides. It was also employed in hydrophobia, by applying the pulp to the part bitten. In the United States it has been used as a prophylactic in infectious diseases in the form of a syrup, but it has not been used extensively as it should have been.

From a study of the essential oil, and the experiments performed during the past few years, it has been found that the drug has a powerful antiseptic action.

Externally it is used as a counter-irritant and rubefacient, in pulmonary diseases and infantile convulsions. It is applied to the spine, legs and feet in the form of a poultice.

Internally garlic is used as a condiment with foods, stimulating digestion, increasing the secretions, especially the broncho-pulmonary, and quickening the circulation. It is used as a stimulating expectorant in sub-acute and chronic bronchitis of infants especially when the disease begins to assume a capillary form. It is of great value as a carminative and eupeptic.

In the present war this drug should play an important part as a medicament in the treatment of different pulmonary diseases of the soldiers at the front who have been affected by gas, the majority of the cases developing a pulmonary disease, such as bronchitis, pneumonia or broncho-pneumonia.

When given in large doses, garlic produces indigestion, gastro-intestinal pain, accompanied by vomiting and diarrhœea. If its use is prolonged for a period, it causes gastro-intestinal catarrh. It has a slight diuretic and diaphoretic action. It is used as a digestant and is prescribed as an anthelmintic; it has been found of good value in tuberculosis.

When eaten by cattle it imparts a very disagreeable odor and flavor to the milk, butter, cheese and other dairy products.

The only unofficial preparation is syrupus alli, dose 4 c.c. for children, and for adults from 4 to 8 c.c. three times a day.

Ducamp, of the Pasteur Institute, while studying cholera bacilli, found that allyl sulphid was superior in every respect to all other oils experimented with, and by mixing by culture methods after being emulsified it would hinder the development of a bacilli by diluting 1:1320. Dr. Ingianni found that a piece of garlic diluted with water in equal parts hindered the development of the cholera bacilli, and that a solution of ½ to 1,000 would kill the same bacilli in adults in two minutes and probably instantaneously at 2:1000.

When garlic is rubbed upon the tissue, as is practiced in Italy for wasp and bee stings, it gives an irritating and phlogistic action, the tissue becomes red, itches and may blister. Taken internally it is well tolerated, though with repeated belching, which gives a disgusting odor. It has an excitant action upon the gastro-enteric mucosa and later it increases the urinary

secretion. When taken in big doses it is capable of causing nausea, vomiting, colic and diarrhœa. Allyl sulphid is best eliminated by the respiratory apparatus.

In 1892 garlic was used by Pertik with success.

In 1893 Dr. Gay recommended it as a preventative for all gastro-enteritis and intestinal diseases. He found it had curative effects in chronic diarrhea.

Contemporaneously, Angyan recommends allyl sulphid in cholera, administered by mouth and clysters.

Sejournet was one of the first to use allyl sulphid in pulmonary tuberculosis; he used a 50 per cent. solution in sterilized olive oil and injected it directly into the lungs with a long quill-shaped needle syringe, through the upper spinous fossa on one side or both, according to the extent of the excavation of one lung or both. In tuberculosis that had no pulmonary excavations he obtained very good results; in other cases of the same type the results were more or less pronounced. Even in lupus he had good results by injections in the affected part.

Dr. William Charles Minchin states that allyl sulphid is nature's antiseptic for internal use, by destroying many pathogenic germs within the body, such as typhus, typhoid and diphtheria.

When typhus or typhoid fever has become established in the body he recommends the use of one dram of succus allii sativi every four to six hours, in beef tea or syrup.

The favorable results obtained by the staff of the Metropolitan Hospital, New York, in the treatment of 2,083 cases of tuberculosis according to 56 different methods, show that garlic gave the best results.

For several years I have made extensive research on garlic and allyl sulphid and according to my results in my laboratory it seems safe to state that within a short time garlic and its constituents will become prominent factors in the treatment of tuberculosis and other infectious diseases.

I would suggest further study and more experimentation. Allyl sulphid, if experimented carefully, can be used with a mixture of any of the halogens as a gas which would be much more potent than the gases used at present.

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## TECHNIQUE, ANCIENT AND MODERN, IN THE TREATMENT OF SPECIFIC URETHRITIS.

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It may not be wide of the mark to contend that, in the management of gonorrheal urethritis, there have been more and varied forms of treatment than for almost any other disease process.

It would seem like harking too far back toward ancient history to search for the earliest recognition and treatment of the disease, but the technique by which the specific infection has been and continues to be attacked is nearly as extensive as man's vocabulary.

An apparently intelligent patient contended, on one occasion, that a previous medical adviser had informed him that a real good attack of gonorrheal infection was a decided benefit to a young man's general system.

If such a suggestion had not been credited to a decided sense of humor, on the part of the previous medical attendant, his position, as a professional man, would have been classified as that which belonged to the dark ages of man.

Just as in the experiences of J. B. Corn's victims, the unfortunates that continue to look upon the wine when it is red, that are made to suffer most fearful consequences, because of long, intimate association with a narcotic poison, penalties are usually the justifiable consequence of the crimes that have been committed against nature.

As to the matter of cure-all remedies for specific urethritis, one doctor was heard to contend that he could eradicate any case of gonorrhea that came under his care with the "good old astringent injection—zinc and lead, with a little of the soothing effect of opium." At this point it might be apropos to suggest that, as the general practitioner has no means of definitely concluding that a urethritis is specific, other than the ordinary symptoms of a urethral inflammation, it would be reasonable to suppose that an host of non-specific urethral cases are cleared up, under the name of gonorrhea, with the so-called "good old astringent injection."

A prominent physician made a hobby of electricity as a cure-all, became very indignant with me for questioning a statement, which he meant—that he could cure any case of gonorrheal stricture with his "violet rays."

An apparently intelligent patient informed me that his family doctor had advised him to soak the disabled, infected member in a fairly strong, hot solution of sulpho-naphthol for one hour at a sitting.

As the discharge and accompanying symptoms did not seem to abate, the patient, thinking that the solution had not been made strong enough, almost ruined the covering of his organ by adding heat and strength to the solution. When he presented himself for treatment he was in a sorry condition.

A quite new effective local treatment was suggested to me a few days since by a very progressive physician —"very weak solution of peroxide of hydrogen, applied morning and night, to be immediately followed by a potassium salt solution (the especial salt named has been forgotten)."

It has been stoutly contended that no kind of injection or irrigation should be used in the infected urethra during the first two weeks of the inflammatory process.

In accordance with this latter technique resort should be had to the various formulae, in capsule usually, to be given internally—during the period of acute inflammatory reaction. Not a few cases have been seen and treated in which the catheter had been used in the subacute stage of the disease, probably in order to be surer of the injection reaching the spot, and, as one result a posterior infection, with prostatic involvement had been set up, clearly indicating that the technique of injection, rather than the early application of treatment, had been at fault.

Since the advent of the normal salt solution in modern surgery, sodium chloride has taken a somewhat prominent place among the remedies for gonorrhea. The normal salt solution is always a most excellent product, but, unfortunately, the solution will hardly prove sufficiently destructive to the vigorous gonococci.

Permanganate of potassium also seemed to find a prominent place in the list of gonorrheal remedies, but aside from being an excellent irrigating fluid to cleanse out the urethral canal, permanganate is not properly effective against the specific microorganisms.

Owing to the crypts and lacunae on the floor of the urethra, the gonococci find favorable lodging place therein. Therefore, a remedial agent, to be effective,

must necessarily be possessed of both the strength, as a germicide, and of the power of penetration. It has been believed that peri-urethral abscesses show that the gonococci have simply burrowed too deep, thus giving nature a fair hope of throwing them out at a side door, in the form of a circumscribed pus formation.

While little time has been spent in experimentation, with the countless suggestions, the very new remedies that have been produced by enterprising pharmacists, etc., much valuable data, relative to a good working technique was gotten. A standard of treatment based upon argentic nitrate and its newer modifications has been found about as unfailing in results as from any remedial agent that has been carefully, intelligently and patiently applied in disease processes. Fairly illustrative of the effect of this useful agent, the following case is offered: W. S. W., 24 years of age, first presented himself for treatment, after having been under the care of a well known general surgeon for four weeks. The patient stated that he was seen and treated three times per week by the surgeon, beginning within a few days after the discharge was first noticed. When asked as to what line of treatment had been used the reply was, "He has used about everything that a big drug store could furnish, but I am worse than when I started in to be treated."

Upon examination the organ was found to be about twice the mornal size and there was a profuse discharge. By way of a very painful complication the patient carried around an unusually large, ripe peri-urethral abscess at the peno-scrotal junction.

The initial irrigation was with a one to five hundred nitrate of silver solution. The localized pus was evacuated under cocain anesthesia, the cavity cleansed and packed with iodoform gauze the following day. The circumscribed infection cleared up promptly.

Argentic nitrate in varying strength solutions was used exclusively and, just two days within the month of careful, thorough treatment, the patient was discharged—when, after repeated tests, there were absolutely no clap shreds in the urine.

It is over twelve years since that course of treatment and, when the patient was recently seen, there had been no return of any sign of the gonorrheal symptoms. The patient has married and reports that his life in respect of the reproductive organs has been quite normal.

A long list of cases, somewhat similar to the latter, might be mentioned, but it would simply be a repetition. All bear out the above contention relative to the efficiency of nitrate of silver and its derivatives.

In concluding the suggestion is offered that instead of trying to offer something new (Solomon contended "there is nothing new under the sun") the effort and motive therefor is simply to point out the stern necessity of applying a thorough, painstaking method of handling one of the most widely destructive diseases with which the physician has to contend; to suggest the thought that, throughout the whole list of remedial agents that have been exhibited, and finally have gone the way of all the earthy, there is not an agent to which the intelligent worker can pin half as much faith as to a very old standby, nitrate of silver, with its useful derivatives, among which are protargol and argyrol.

The latter are admissable in many cases where the nitrate cannot be used, because of its reactionary irritation. However, quite strong solutions of the nitrate have been used in the subacute stages of specific urethritis to be followed by absolutely no burning or irritation.

Under definite application to a blocked up follicle, located with the endoscope, incised under cocain, ten or twenty per cent. silver solution, applied upon a little plegget of cotton at the end of a long wooden applicator, has caused the point of infection and a chronic gleety discharge to disappear like a misty fog before the rising sun.

Final allusion is made to the lamentable fact that it is not an infrequent habit for physicians to take charge of and treat venereal infections, when they care little or nothing for a good working technique, simply because they do not care to handle "the disgusting cases"—only for the sake of the two dollars per.

## PREVENTION—THE SLOGAN OF MODERN MEDICINE.

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A few months ago a professor of orthopedic surgery in a Chicago medical college wrote an article for the *J. A. M. A.* complaining that there are so few special hospital for the treatment of crippled children, considering the enormous number of cripples in this country. He called upon the medical men of the country to put "their shoulders to the wheel" and to use their influence with their legislators to have built a special hospital in each State for the treatment of crippled children.

Medical men, above all others, are alive to the fact that one ounce of prevention is worth several pounds of cure, but not a word in the aforesaid article mentions prevention, although prevention is the slogan of modern medicine. In every country medical men are making it their life's work, and are spending their time in laboratories in search of the cause of and the methods and remedies to prevent disease. Hundreds of others are engaged in teaching the care of the body, the prevention of disease by developing efficiency in health and strength by physical culture, etc. Stranger than fiction, fools, demagogues and fanatics are loud in their wails that such efforts are man's attempt to thwart the design of the Almighty.

The professor's sympathies for the poor unfortunate crippled children were so wrought up that he forgot the fact that about ninety per cent. of them *ought not to be*. The fact is there probably are orthopedic hospitals sufficient to treat the necessary crippled children.

It is quite time, in fact it is a duty the medical profession owes the people, that medical men "put their shoulder to the wheel" and use their influence with their legislators in their respective States to pass such laws as will prohibit the lame, the halt, the blind, the syphilitic, the tubercular, the feeble-minded, the insane, the whiskey fiend, the opium fiend, the criminal, the degenerate, the flotsam and jetsam, the derelict, etc., from propagating their kind. If medical men do not soon take this matter in hand taxpayers will be compelled in self-defense to recognize its importance. What with orphan asylums, children's hospitals, municipal hospitals, alms houses, institutions for the feeble-minded, insane asylums, dispensaries, state prisons, charities, etc., the necessities from such burdens will demand relief.

The poor, the crippled and the *necessary* unfortunate, we will always have with us, and they will always be cheerfully cared for. There always has been and always will be a class of sentimental maudlins, political demagogues, etc., who will strenuously oppose any common-sense plan to relieve the taxpayers from their

*unnecessary* burdens. The time is coming when relief from *unnecessary* taxation will be sought and obtained; when ethics is recognized as the basic principle of politics and politicians cease to be time servers and stand for justice and truth. Improving the breed of animals, horses, cattle, sheep, hogs, etc., is of incalculable benefit to a state or nation; to improve the breed of man is of much more importance. Our State controller is loud in his complaint of the increasing burdens of our State taxation and the absolute necessity of relief to the taxpayer. In these strenuous times economic questions demand and command consideration. It is not possible that intelligent people will continue to submit to such *unnecessary* taxation. Tax collectors are quite void of sentiment. As a rule the maudlin sentimentalists are not in the class of heavy taxpayers.

If about three-fourths of the charity associations could be converted into prevention societies, what a magnificent and beneficent work they could accomplish for a community!

## AN UNPRECEDENTED OPPORTUNITY FOR WOMEN.

EMMA WHEAT GILLMORE, M. D.

CHAIRMAN COMMITTEE OF WOMEN PHYSICIANS GENERAL MEDICAL BOARD, COUNCIL OF NATIONAL DEFENSE.

Chicago, Ill.

The same year that gold was discovered in California a lone pioneer received the first medical diploma which the United States had issued to a woman. Other colleges shortly followed the example of the one which had opened its doors to Elizabeth Blackwell, and today over fifty co-educational medical schools admit women upon the same terms as men.

There are more than 25,000 American physicians in military service, and the Council of National Defense is undertaking, through the Volunteer Medical Service Corps—an organization which has President Wilson's approval—the task of classifying the qualifications of ninety thousand more. Of these, about six thousand are women, less than one-third of whom have registered with the General Medical Board.

In spite of the overwhelming difference in number—6,000 women and over 100,000 men—and regardless of the fact that over twenty-two centuries have passed since Hippocrates wrote the immortal oath and only sixty-nine years have elapsed since women entered the medical profession, the Volunteer Medical Service Corps has invited them to membership with the same impartial cordiality as it has the men.

During the last week in August application blanks for the Volunteer Medical Service Corps were mailed in franked envelopes to all legally qualified men and women in the United States who were not already in Government Service. Presumably a number of women have been overlooked because many of them are not members of medical societies, but this will speedily be corrected if a notification of the omission is sent to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C.

Meanwhile, medical women who possess a vision will see in the Volunteer Medical Service Corps an incomparable method of organization which will register their qualifications and place them in an identical coded class system with men physicians. This Corps is in reality an ideal procedure for mobilizing the military forces of our country for selective medical war service. Incidently it will place loyal and patriotic medical women by the side of those men who are willing to give themselves. Even though all of them are not elected to membership, their names will be on file with the Government as willing to serve as far as their strength and capability will permit, and no one can point a finger at them and say "slacker."

Will a page be turned over in the history of American medical women upon which will be written the qualifications of 6,000 of them, matching that group of English physicians known as the Scottish Women's Hospitals, which was so perfectly organized that they were able to hand over to their government a constructively organized body of professional women for military service? Or shall we continue, as we have done in sporadic groups for the past sixty-nine years, to demand recognition of men and at the same time neglect to unanimously affiliate with them in recognized medical societies, and to withhold our influence both with pen and vote when medico-social and medico-political and medico-scientific issues are at stake which shake the very foundation upon which medicine rests?

The body politic of the civilized world holds a prominent place for the profession of medicine in the near future. Are we to have a hand in shaping it? The Volunteer Medical Service Corps is big with promise for women of the medical profession if we take advantage of it to put ourselves on record. The response which the Council of National Defense receives from women who apply for membership will tell the tale as to whether they have or have not grasped and taken advantage of the unprecedented opportunity which this world's war for democracy has opened up for them through the medium of the Volunteer Medical Service Corps.

# Special Article

### Volunteer Medical Service Corps of the United States

1. What is the Volunteer Medical Service Corps?
   The Volunteer Medical Service Corps is an organization which provides means for obtaining quickly men and women for any military or civil medical service required in the war emergency. It furnishes recommendations and necessary credentials to assure the best medical service, both military and civil.
2. How should application for membership be made?
   Upon request to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C., application blanks and circulars of information will be sent. When received, the application form should be filled out completely, in accordance with instructions contained in the circular of information. The application should then be mailed to the Volunteer Medical Service Corps, Council of National Defense, Washington, D. C.
3. What is to be gained by the creation of this organization?
   Placing on record all medical men and women in the United States; aiding Army, Navy, Public Health Service, Provost Marshal General's Office and the American Red Cross in supplying war medical needs; providing the best civilian medical service possible; giving recognition to all who record themselves either in Army, Navy, Public Health Service, Provost Marshal General's Office, Red Cross activities or civilian service.
4. What is meant by classification?
   It is the record of information furnished by the individual physician so that when the need arises, he may be requested to perform service that will be mutually advantageous to the individual and the service to which he may be assigned.
5. Who are eligible?
   Every legally qualified physician holding the degree of Doctor of Medicine from a legally chartered medical school without reference to age or physical disability is eligible for membership in the Volunteer Medical Service Corps provided he or she is not already commissioned in the Government service.

6. How is eligibility to the Corps determined?
   Upon information obtained from application blanks, three personal references and the Executive Committee of the state in which the applicant resides. Based upon the information thus secured, the Central Governing Board will finally pass upon applications.
7. Does membership in the Corps carry with it rank and pay?
   *This Corps is not authorized to bestow rank. Arrangements for compensation shall be made between a member requested to perform a specific duty and the agency requesting service. The matter of compensation and place of service whether with or without rank must be determined at the time said request is made. When a member of the Corps accepts service in the Medical Reserve Corps of the Army, the Naval Reserve Force, the United States Public Health Service, the American Red Cross or any governmental department, he or she will be accorded the rank and pay incident to the service in the department in which he or she has enrolled.*
8. Will any member of this corps be ordered to active duty?
   *No member will be ORDERED to render any service.* Requests to perform specific duties according to qualifications and availability under the classification of the Volunteer Medical Service Corps may be made from time to time as emergencies arise.
9. What will be the probable character of service member will be requested to render?
   (a) Medical Reserve Corps.
   (b) Naval Reserve Force.
   (c) United States Public Health Service.
   (d) American Red Cross.
   (e) Local and medical advisory boards.
   (f) State and local health departments.
   (g) Medical schools and hospitals.
   (h) Industrial plants.
   (i) Civil communities.
   Caring for civil communities stripped of medical attention. Caring for practices of physicians in military service. Reclamation of registrants rejected for physical unfitness. Services to needy families and dependents of enlisted men.
   (j) Miscellaneous service.
10. If members of the corps are recommended for active military or naval service, in what order will they be recommended?
   (a) Physicians under 55 years of age without dependents and without physical disabilities which are disqualifying will first be recommended. Following this group, physician under 55 years of age without obvious physical disabilities which are disqualifying and with not more than one dependent in addition to self (Class I of the Volunteer Medical Service Corps) will be among the first to be recommended for actual war service. Any physician under 55 years of age who is without an obvious physical disability which is disqualifying and whose dependents have an income sufficient for the support of dependents other than that derived from the practice of his profession, may be recommended to enroll in the Medical Reserve Corps of the Army, the Naval Reserve Force or the United States Public Health Service when in the opinion of the respective Surgeons General his services are needed..
   (b) Physicians under 55 years of age without obvious physical disabilities which are disqualifying and with not more than three dependents in addition to self (Class II of the Volunteer Medical Service Corps) will be the next group to be recommended to apply for active military or naval service.
   (c) The next group recommended to enroll for active duty with the army, navy or public health service (Class III), will be physicians under 50 years of age who are without obvious physical disabilities which are disqualifying and with more than three dependents in addition to self.
11. What are the exceptions in these groups?
   The exceptions in the above groups of physicians are as follows:
   (a) Those essential to communities.
   (b) Those essential to medical schools and hospitals.
   (c) Those essential to health departments.
   (d) Those essential to industries.
   (e) Those essential to local and medical advisory boards.
12. How will exceptions to these groups be determined?
   (a) *Essential to communities.*
   Essential community need will be determined by the Central Governing Board on recommendation of representatives of the Central Governing Board appointed by the Board to make a survey of local conditions.
   (b) *Essential to institutions.*
   Essential institutional need will be established after conference between representatives of the Central Governing Board of the Volunteer Medical Service Corps and representatives appointed by the governing bodies of the institutions concerned.
   (d) *Essential to health departments.*
   Essential health department need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of health departments.
   (d) *Essential to industries.*
   Essential industrial need will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and accredited representatives of industries involved.
   (e) *Essential to local and medical advisory boards.*
   Essential local and medical advisory board needs will be determined after conference between representatives of the Central Governing Board, Volunteer Medical Service Corps and representatives of the Provost Marshal General's Office.
13. When will physicians who are not classified for actual military or naval service be requested to perform service?
   When the emergency arises the following may be requested to perform duties in accordance with their qualifications and expressed merits as indicated by the information contained on their application blanks:
   (a) Physicians over fifty-five years of age.
   (b) Physicians with obvious physical disabilities which are disqualifying.
   (c) Those rejected for all government service because of physical disability.
14. What are some of the duties that this last group of physicians ineligible for active military service may be requested to perform?
   (a) Deducting those members of the medical profession who will eventually be in active military, naval or public health service, fully seventy-five per cent. of the remainder will be encouraged to continue at their home duties.
   (b) Some of these may be called upon to supplement their private practices by performing part time service to meet community needs hitherto performed by men called to active duty.
   (c) Twenty-five per cent. of those not actually engaged in war service (possibly 20,000 in number), who are now engaged in home duties but who have agreed to do work of any kind, anywhere, upon request of the Central Governing Board, will as the emergency arises be recommended for duty in the following places:
   1. Local and medical advisory boards.
   2. Medical Schools and Hospitals.
   3. Industrial plants.
   4. Health Departments.
   5. Communities lacking medical service.
15. How does enrollment in this Corps differ from actual conscription?
   The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors of the United States who have not yet been commissioned in the Army or Navy or enrolled in the Public Health Service, or in the service of the Provost Marshal General, and a representative board consisting of government officials associated with lay members of the profession in which the civilian physicians agree to offer their services to the Government if requested to do so by the Central Governing Board.
16. In what way can this Corps aid the Government?
   By recording all physicians who are not yet in service and classifying them so as to utilize the talents and facilities of individuals to the best advantage and inflict as little hardship on the individual as possible, in accordance with the letter from the President of the United States authorizing the Corps—"to supply the needs of the Army, Navy and Public Health Service * * * aiding in the important work of the Provost Marshal General's Office and Red Cross * * * and the problems of the health of the civilian communities of the United

States." It provides a method by which every physician not in uniform will be entitled to wear an insignia which indicates his willingness to serve his Government. It furnishes a method by which the medical needs of the nation may be provided for through a representative board of physicians who know the needs of the Army, Navy, Public Health Service, Red Cross and civil communities.

17. To what extent must provision be made for essential civilian and industrial medical needs?
A large percentage of the physicians of the country will be required to care for their respective home communities and to meet civilian health needs. This percentage of necessity will be expected to maintain their home status and continue their professional work.

18. Will enrollment in the Volunteer Medical Service Corps excuse a physician in the draft age from registration under the Selective Service Law or from being classified therein?
Positively not.

19. Why then enroll in the Volunteer Medical Service Corps if it does not supplant the draft?
(a) Under the Selective Service Law individuals in the draft age are registered and inducted into the service as privates. The Volunteer Medical Service Corps enrolls and classifies individuals as prospective commissioned officers and will when requested assist in establishing the individual's status when he requests transfer from the enlisted forces to the commissioned branches of the service.
(b) Enrollment in the Volunteer Medical Service Corps definitely registers the physician as a patriot and provides definite governmental recognition of his willingness to serve.

20. Why should every physician in the United States enroll in the Volunteer Medical Service Corps?
(a) The unsurpassed record of volunteer enrollment for actual service on the part of the medical profession must be maintained.
(b) The Army and the Navy must not be hampered for a moment for lack of doctors to care for the sick and wounded boys fighting our battles at the front.
(c) The public health must be conserved.
(d) The medical needs of the Provost Marshal General must be adequately met.
(e) The great industries furnishing materials of war employing thousands of patriotic workers, must have medical service.
(f) The home folks, the old and the young wearily waiting over here, must have doctors.
(g) Recording, classifying, and careful distribution and full utilization of our entire profession of medicine will enable us to instantly supply all demands, and our utmost resources will then be available to aid in establishing a permanent peace that will forever make this world a safe place in which women and children may live.

# Correspondence

## Mobilization of Women Physicians for Anesthetic Service.

*To the Editor of* THE MEDICAL TIMES:

Every effort is being made to keep war surgery at top-notch efficiency and to provide every wounded American doughboy with safe, rapid and comfortable anesthesia at the Front and in the hospitals in blighty. The following telegram is self-explanatory:

Washington, D. C.,
September 18.

Dr. F. H. McMechan:

Proceed at once to round-up qualified women physician anesthetists under 45 years of age, of mental poise, as well as young women graduates, who are competent for such service.

DR. FRANKLIN MARTIN (per)
DR. EMMA WHEAT GILLMORE,
Chairman: Women Physicians' Committee,
Council of National Defense—Medical Section.

Those women physicians who are qualified for anesthetic service or who are competent to be intensively trained are requested, at once, to get in touch with

DR. F. H. MCMECHAN, Sec'y,
Interstate and American Associations of Anesthetists,
Avon Lake, Ohio.

## Save Platinum.

From:

Lieut. Colonel F. F. Simpson, M. C., Chief of Section of Medical Industry.

To:

The Doctors and Dentists of the Country.

Subject:

Utilization of Platinum in Unused Instruments.

1. In view of the limited supply of platinum in the country and of the urgent demand for war purposes, it is requested that every doctor and dentist in the country go carefully over his instruments and pick out EVERY SCRAP OF PLATINUM that is not absolutely essential to his work. These scraps, however small and in whatever condition, should reach Governmental sources without delay, through one of two channels:

(a) They can be given to proper accredited representatives of the Red Cross who will shortly make a canvass for that purpose.
(b) They may be sold to the Government through any bank under the supervision of the Federal Reserve Board. Such banks will receive and pay current prices for platinum.

By giving this immediate attention you will definitely aid in the war program.

2. It is recognized that certain dental and surgical instruments requiring platinum are necessary, and from time to time platinum is released for that purpose. It is hoped, however, that every physician and every dentist will use substitutes for platinum for such purposes wherever possible.

3. YOU ARE WARNED against giving your scrap platinum to anyone who calls at your office without full assurance that that individual is authorized to represent the Red Cross in the matter.

F. F. SIMPSON.

## The Commissioning of Medical Officers.

To the Editor of THE MEDICAL TIMES:

In a recent issue you published a timely editorial touching the seeming injustice in connection with the giving of commissions to men in the medcal service. As you then stated, a physician who had no particular prominence among his fellows, enlists—in many recent cases, to escape the draft—is sent to some cantonment for a few months and then a captaincy is conferred on him, if indeed it is not given him at time of enlistment—while the men who enlisted almost as soon as we entered the war, and have been "over there" for more than a year, "bearing the heat and burden of the day," are still lieutenants. I have heard the statement made that political influence had much to do with this. Can this be so? Should not those of us who are too old, or too infirm, to go, but who have sent our sons, take some concerted action in regard to this injustice? Was not the so-called Owen-Dyer bill supposed to correct this, and if so did that bill pass?

A PHYSICIAN WHO HAS TWO SONS IN THE SERVICE.
Newton, Mass., Oct. 12th.

## New Reportable Diseases.

Influenza, acute lobar pneumonia, and bronchial or lobular pneumonia, have been included among the infectious diseases which are required to be reported to the Department of Health by physicians and superintendents of hospitals and dispensaries of New York City. Isolation of persons affected with these diseases is required, and such isolation must be maintained until the termination of the disease.

## Sclerosis of the Pulmonary Artery.

Barlaro describes a case of Ayerza's disease in a woman of 44. The face was very cyanotic, pulse 80 regular, the right heart dilated. The red count was 6,680,000. She usually had three attacks of dyspnœa during the 24 hours, relieved by expectoration. This had been going on for three years. Occasionally there was blood in the sputum. She was inclined to be chilly and her feet were always cold. Barlaro gives a skiagram of the case, and discusses the various affections with which this clinical picture from sclerosis of the pulmonary artery is liable to be confused. Syphilis is probably responsible for the trouble in most cases; this was evident in the case described. Barlaro adds that probably some of the cases were of this type, which have been recorded as primary and chronic myelogenous polycythæmia (Vaquez' disease), especially in the form of enlargement of the spleen. This is particularly likely in the case of chronic bronchial catarrh, pulmonary emphysema or a persistent cough through two or more years with blood at times in the sputum.—*(Revista de la Assn. Med. Argentina)*

# Diagnosis and Treatment

## The Pandemic of Influenza.

The influenzal pandemic is on the wane both in England and among our troops and allies on the Continent. It has already given rise to a great quantity of ephemeral medical literature, and no doubt in the future will form the subject of more deeply studied and even labored official reports. Is it possible, meanwhile, to draw any definite conclusions as to its origin and nature? There seems good reason for supposing that it came to us from Spain, in the first instance, in April last. It is generally agreed that it is an acute bacterial infection, and the general consensus of opinion seems to indicate Pfeiffer's *Bacillus influenzae* as the infecting agent. But by no means all the medical men and bacteriologists who have investigated the epidemic will agree with so summary a generalization.

In some instances Fraenkel's pneumococcus has been indicated as the cause of this "influenza"; it would be interesting to know how far such pneumococci would prove pathogenic on inoculation into experimental animals. Other investigators have found a Gram-negative micrococcus, resembling the meningococcus at first sight but later proving to be a *Micrococcus catarrhalis*, to which the local epidemic was attributed. Others, again, have found true pneumobacilli; and others have found various organisms in combination, and are inclined to attribute the disease to a combination of, say, *M. catarrhalis* and *B. influenzae*. It is treu that such a symbiosis is not common in the diseases of human beings, although it may occur in scarlet fever. But in the large majority of localities Pfeiffer's bacillus has been found, both in this country and on the Continent, in a greater or smaller percentage of the throat swabs taken from the patients, and more often, we believe, in the expectoration in cases complicated by bronchitis or bronchopneumonia. An involvement of the kidneys has not been generally noted.

The importance of acute pulmonary infections, in the production of trench nephritis, for example, is a point that has not infrequently been raised in recent years; it would seem that post-mortem evidence of an acute infection of the kidneys has been met with in fatal cases of influenza during the past two months, but only exceptionally. As a rule death has been caused by acute asphyxiating bronchiolitis, or by bronchopneumonia, due in most instances to Pfeiffer's bacillus; no single variety of post-mortem findings can be described as typical, and this is perhaps natural in view of the fact that the patients dying of this influenza are for the most part the older patients with lungs already diseased—adherent, emphysematous, bronchitic, or what not. This may account for the fact that the mortality has been set as high as between 1 and 2 per cent. in some of the recent reports of local influenzal epidemics; absolutely, of course, such a figure is low, but in view of the general mildness of the disease as we have recently seen it, it may be looked upon as relatively high.

That we have to do with anything other than a pandemic of influenza may fairly be regarded as most unlikely. Certainly some investigators have failed to isolate the influenza bacillus from the secretions of some or all of their "influenza" patients, but this is a phenomenon not rare in true influenzal epidemics. The suggestion that we have to do with an outbreak of glandular fever rather than influenza is supported by Captain Burnford's observation, recorded in our last issue, that the patients have a general lymphadenitis, or enlargement of the lymphatic glands. But is such an enlargement ever absent in any large percentage of our soldiers, sick or well? Probably not: in fact, we cannot regard his arguments in favor of some diagnosis other than that of influenza as conclusive.—(*Brit. Med. Jour.*, July 27, 1918.)

## Modern Views on Diabetes.

Diabetes has long been known to be characterized by the excretion of glucose, and the usual treatment of the disease has been by the elimination of carbohydrate from the diet. Nevertheless, patients still excrete sugar, and we shall be excused if we enumerate, for the sake of clearness, the views which are generally accepted on this matter. The source of the sugar has been traced to protein. Protein consists of some 18 amino-acids; some of these, such as glycocoll, alanine, glutamic acid, are converted into glucose not only in experimental animals (depancreatised, phloridzinised), but also in diabetic patients. Others are not convertible into glucose.

Another origin of carbohydrate is fat; such a transformation occurs in hibernating animals and has been found to take place in some diabetics; it is not of outstanding importance. The glucose excretion is not the only symptom of diabetes. In severe cases the acetone bodies, acetone, aceto-acetic acid and-β-oxybutyric acid, are produced and excreted. Acetone is a decomposition product of aceto-acetic acid and is not the primary product. Aceto-acetic acid and β-oxybutyric acid are interconvertible in the body, but the main conversion in the body is that of aceto-acetic acid into β-oxybutyric acid by the process of reduction. The liver is the organ which is mainly, if not entirely, concerned in this mechanism. Aceto-acetic acid is the primary product; β-oxybutyric acid is the safeguard. The production of acid was formerly attributed to be the cause of diabetic coma, hence the treatment with sodium carbonate, which was not really effective. Acidosis is not the cause of coma, but the toxic action of aceto-acetic acid. The term ketosis, as aceto-acetic acid is a ketonic acid, is suggested to distinguish this action from acidosis. The fat of the food had been proved to be the source of the aceto-acetic acid, but it may also arise from protein. Though aceto-acetic acid can theoretically be derived from carbohydrate, this source may be excluded.

To sum up—the glycosuria arises from the carbohydrate and the protein of the diet, ketosis from the fat, and, to a small extent, from the protein. The diabetic may be described as an individual who utilizes sugar too slowly; in the absence of carbohydrate more protein and fat are catabolized than normally and more aceto-acetic acid is produced; this acid is difficult to catabolize and is reduced to oxybutyric acid; the oxybutyric acid is excreted instead of being oxidized in the normal way. The work on which many of these categorical statements are based was done by Hurtley.

Diabetes is, therefore, a general disorder of the metabolism; the patient cannot properly utilize carbohydrate, he produces carbohydrate from protein, and, further, he produces aceto-acetic acid from fat. It would follow that the rational treatment of diabetes is to curtail the amount of all kinds of foodstuffs to the lowest possible limit, so as to reduce the quantity of the excretory products. This is the modern treatment of the disease as described by Dr. E. P. Poulton in the Goulstonian lectures. It has met with a considerable amount of success. Fatal cases in Guy's Hospital have been reduced from 23 per cent in the ten years before 1916 to 7.7 per cent since 1916, owing to the adoption of treatment by fasting. Similar results have been recorded in other hospitals. By the fasting treatment carbohydrate disappears from the urine, and there is less aceto-acetic acid. By careful addition of carbohydrate to the diet it is possible easily to determine the carbohydrate tolerance of the patient. He may be able to assimilate, say, 50 g. of carbohydrate, but not 100 g.; as soon as this is determined he is given the right amount in his diet. Similarly, the protein and the fat are adjusted. On these small diets the patient does not receive the caloric value of food which is considered necessary to maintain life. By careful treatment he may be made to take from 1500 to 2000 calories, the lowest limit for the normal individual. A considerably reduced amount of food has been shown to be capable of maintaining life without loss of efficiency.

Success has thus followed the application of the results of biochemical research, but the research on diabetes is not yet finished. It has depended on the chemistry of the proteins and the fats. Proteins have always been regarded as a source of both good and evil to mankind. The diabetic produces sugar from protein; yeast produces fusel oil; bacteria produce toxins. Proteins are indispensable for nutrition; there is no life without the amino-acid tryptophane; growth is dependent upon lysine; arginine and histidine are also essential to life, and they may be precursors of uric acid. In considering the protein moiety of the diet its quality is the most important factor. No two proteins are alike in their composition, just as outwardly eggs are not like meat; they are wrongly reckoned as alternatives in judging food values. Obscure points in other diseases have been cleared up by a knowledge of proteins, especially diseases of deranged metabolism. The biochemistry of fats, which is now in its beginning, is sure to throw more light upon normal metabolism and upon disease. The actual stages of oxidation of fat in the body are unknown, though much experimental work has been done. Minute biochemical research in the future will clear up this ignorance and abolish the numerous useless and unnecessary theories which impede progress rather than advance knowledge, since they simulate and are mistaken for facts.—(*Lancet*, July 13, 1918.)

When a bronchial lymph-node becomes infected with bacteria it swells, stasis of the lymph flow in the part of the lung drained into the node results, the bacteria from the node migrate into the dammed up lymph, and a lymphangitis ensues.

## A Common Origin for Shingles and Chicken-Pox.

Dr. W. P. Le Feuvre (*Brit. Jour. of Derm. and Syphilis*, Oct.-Dec., 1917), comes to the following conclusion as a result of a series of very interesting and suggestive observations: "Shingles should be definitely recognized not only as an infectious disease but also as one liable, under certain unknown conditions, to become a starting point for a chicken-pox epidemic, and, therefore, deserving of a place in the list of notifiable diseases." What is the evidence upon which so important a conclusion is based? This writer in three years took notes of seven cases of chicken-pox in children following shingles in one of the parents. Thirteen similar cases were elicited, as a result of publication by the writer of some of his cases, from English practitioners.

Seventeen more came up in the correspondence columns of the *British Medical Journal* in 1913. Two are recorded from Guernsey and, finally, 11 were reported up to 1912—50 cases in all. The points common to all were: (1) Chicken-pox in one individual following shingles in another within the ordinary incubation period for the former disease—i.e., within 21 days; (2) no other source of infection besides shingles discoverable; (3) by far the majority of cases showed shingles in an adult, generally a parent, followed by chicken-pox in a child. Further, three distinct types could be recognized: (1) Chicken-pox in one individual contracted from shingles in another (41 cases); (2) shingles contracted from a case of chicken-pox (5cases); and (3) shingles and chicken-pox existing in the same individual at one and the same time (4 cases). The last group is very interesting. They are quoted in some detail and look quite convincing. The site of the herpes was variable, but in all the interval between the herpetic and varicellar eruption is fairly constant—i.e., from two to four days.

A striking case illustrative of this group is quoted from Dr. F. Parkes Weber's paper on Herpes Zoster, published in *International Clinics* (Vol. iii., Series 26), where herpes broke out in a patient whilst having arsenical treatment. "Five days later a generalized but scanty eruption of varicella-like spots occurred. A little boy, aged 4 years, was in the same ward, and 10 days after his discharge from the hospital developed varicella." Two other cases showed similar development of varicella-like spots after herpes zoster. Such is the evidence in favor of the suggested close relationship between these two diseases. It is a question, obviously, to which the general practitioner can most satisfactorily supply the answer.—(*Lancet, Feb.* 16, 1918).

## Effect of Auricular Fibrillation on the Heart.

The effect of auricular fibrillation on the heart's action is usually pronounced. Instead of the ventricle receiving stimuli from the auricle at regular intervals, it receives them at completely irregular intervals. Further, the impulses which escape are numerous, and, if the conducting tissues are able to transmit them, the ventricular rate rises. Thus, an irregular, and, in the large majority of cases, a much too frequent pulse is produced. Such a change in the action of the ventricle, as a rule, produces a decided effect on the heart's efficiency.—(*Practitioner.*)

In auricular flutter, the auricles contract regularly and rapidly, usually about 300 per minute; there is always a degree of heart block present; the ventricles usually responding to every second auricular contraction, so that the ventricular contractions are regular and usually half the auricular rate. If the ventricles only respond to every third or fourth auricular contraction, their rate will, of course be slower.—(*Practitioner.*)

The rhythm of the heart is abnormal, when the stimulus giving rise to its contractions starts in some part of the heart other than the sino-auricular node.

Intravenous injections of strophanthin may be used in urgent cases of cardiac failure, when it may be advisable to obtain a more speedy result than is possible by the administration of one of the digitalis series of the drugs by mouth. I myself employ one dose of 1/100 of a grain, or two or three doses of 1/250 of a grain every two hours. This may be followed by the administration of tincture of digitalis by the mouth, when advisable.

When auricular fibrillation is not accompanied by a rapid pulse, no decided result usually follows the administration of digitalis; indeed, it is often difficult to be certain how far the improvement may be due to the rest in bed and other measures adopted, apart from the effect of the drug.—(*Practitioner.*)

Auricular fibrillation is, in the great majority of cases, indicative of some myocardial disease. Furthermore, the rapidity and irregularity of the heart's action, which are usually associated with the condition, necessarily embarrass the functional efficiency of the organ.

The term "fatty heart" means fatty overgrowth with resulting fatty infiltration between the muscle fibres, and not infrequently resulting fatty degeneration. The first is an abnormal development of fat in or between the muscular substance of the heart, often impairing the contractile power, and not infrequently resulting in actual fatty degeneration. Hereditary predisposition exercises a marked influence on the occurrence of obesity, and no doubt also on resulting fatty infiltration. The condition is more than twice as common in the male as in the female, and is generally found after middle life. Improper food, sedentary habits, alcoholism, particularly in the consumption of malt liquors, are important factors.

Most of the cases of fatty heart are found in corpulent subjects and the simple reduction of weight in these cases is unfortunately not very often accompanied by a corresponding improvement in the cardiac condition.

In discussing Grave's disease, a writer in the *Practitioner* says:

"As thyrine is a hormone to the suprarenals, may not adrenine be a chalone to the thyroid? This is an interesting question which physiologists might answer. It is useful while giving suprarenal extract—and it should be given freely, at least three 5-grain tablets daily—to keep the tension as nearly normal as possible. This can be done by giving hippurate or nitrite at the same time (in low tension cases this would be unnecessary). By so doing the heart's action will be steadied and strengthened, and much of the wear and tear both to the heart and nerves will be lessened.

Strophanthus will help this a good deal, but, as a rule, not digitalis.

The most serious sequela of relapsing fever is the affection of certain peripheral nerves resulting in the paralysis of the muscles which they supply. This phenomenon takes place a few days after the pyrexia, either in the first or second attacks, and may be accompanied by sensory symptoms in the form of numbness, but actual anesthesia has not been observed.

The determination of the functional capacity of the heart is of great importance, but difficult to estimate. Of the various tests proposed, those of Herz and Shapiro seem the most practical. Herz determines the pulse-rate per minute and then causes the patient to extend and flex the right forearm without much muscular contraction for one minute. In the normal heart there is no change, but in the weak heart the frequency is reduced from five to twenty beats per minute. Shapiro counts the pulse first in the recumbent and then in the sitting position. In health the frequency should be increased from 3 to 10 beats per minute, but in the weak heart there is an absence or diminution of this frequency.—(*Med. and Surg.*)

An important point to be remembered is that one of the most common causes of sudden death is due either to sudden obliteration by a thrombus of one coronary artery which has been narrowed by arteriosclerosis or endarteritis.

Myocardial degeneration secondary to hypertrophy and dilatation, the result of over-strain in athletics, is far more common than is admitted, and when the heart is called upon for reserve force in an acute illness it is often found wanting. —(*Med. and Surg.*)

## Studies of Immunity.

A. Blumberg concludes: 1. That true antigens (e. g., antigens which contain the etiologic factor of the disease, emulsified or autolyzed) will work only where there is a polymorphonuclear leucocytosis present.

2. While tuberculosis is a disease presenting a lymphocytosis, it will fix the complement with a specific antigen, which, however, is not a bacterial emulsion, but a heated egg medium culture containing small amounts of lipoid.

3. Tissue extracts of mammals, birds, reptiles and fishes may serve as useful antigens for the diagnosis of syphilis.

4. If normal urine is added, the complement of the hemolytic system is affected without the presence of a specific antigen.

5. The presence of hemolysis in the test of the fourth group indicates either some type of affection of the kidney (even when no albumen or casts are demonstrable) or pregnancy, the two conditions frequently being separable by the clinical history of the patient.

6. The absence of hemolysis in a hemolytic system to which urine is added speaks against the condition of pregnancy.

7. In complement fixation without an antigen, reaction affecting the third tube (which serves as a control tube and should not hemolyze) speaks for nephritis, rather than pregnancy.—(*Jul. Lab. & Clin Med.*, April, 1918.)

The formation of lenticular sclerosis may be the result of a general arteriosclerosis or it may be due to some toxic element in the circulatory system.

## Post-Operative Pneumonitis.

By pneumonitis Whipple (*S. G. O.* No. 1, 1918), means not necessarily pneumonia, but a condition of the lung recognized in 1848, and called, after its describer, Woillez's disease by the French. The lung shows engorgement of the capillaries and exudation into the alveoli of mucus, red blood, epithelial, eosinophil, and mononuclear cells, but no fibrin. As a post-operative event this change is much commoner than is generally thought, and is often dismissed under the casual term "post-operative reaction."

Among 3,719 operations at the Presbyterian Hospital, New York, during 1915-16, when this subject was being specially investigated, it was detected in 97 cases, 88 being laparotomies. The most important disposing factors are recent or concurrent inflammation of some part of the respiratory tract, pulmonary congestion, inhibition of the normal respiratory movements by the pain of the abdominal incision, by distension or tight bandaging, debility, sepsis, and cachexia, and increased numbers and virulence of the pneumococcus during the winter and early spring. Five of the cases were regarded as embolic pneumonia, but in no instance was this proved by examination after death, and the widespread belief that post-operative pneumonia is generally embolic is not accepted. Neither can the anaethesia be regarded as solely responsible, for the cases of pneumonitis may show a higher percentage incidence among cases under local than among those under general anaesthesia. Ether, however, is especially irritating to the oropharynx, and so should never be given to a patient with "a cold." The infective agent is in most of the cases—in 46 out of 69 examined—pneumococcus Type IV, a saprophyte in 60 per cent. of throats, responsible for a short, athypical, and mild form of pneumonia.

Fourteen cases showed pneumococci of other (I, II, III) types, and five the influenza bacillus. As a rule there is no initial rigor, no rusty sputum, no sustained high temperature for five to seven days, no severe toxaemia, or alarming symptoms terminating by crisis. The symptoms come on within forty-eight hours of the operation with a sharp rise of temperature to 102° or 104° F., cough, increased respirations, pain, though rarely severe, in the side, more often the right, and usually dulness over the base of the one lung but bronchial breathing does not appear for another two days, and then after another day the fever goes by lysis. Skiagraphy is a valuable means of diagnosis in the early stages, and usually shows a shadow before there are physical signs of frank consolidation. In cases infected with pneumococcus Type IV agglutinins appear during the second week after the onset. Prophylaxis, it is said, consists in avoiding operation, when possible, on a patient with inflammation of the respiratory tract, in care in the anaesthetic, in protection against chills, and in anticipating pulmonary congestion by digitalis four-hourly for thirty-six hours before the operation.—(*Brit. Med. Jour.*, March 30, 1918)

## Treatment and Mistreatment of Tuberculosis.

S. V. Wright, of Dallas, Texas, discusses the proper treatment of tuberculosis. When a case of tuberculosis is discovered the duty of the physician is not only toward the patient but also toward the family. Immediate relatives and associates, especially young children should be examined for tuberculosis and if clinically ill, or in the case of children, if undernourished, proper steps should be taken. Toward the patient the prime duty is to give him the proper education. As this is best achieved in an institution steps should be taken for his admission to such a one suited to his case. The relative importance of continued treatment after arrest of symptoms should be insisted on. He should be taught the proper attitude toward this disease, to take it just seriously enough and not too much so. He should learn that he must continue to observe these principles for a long time if he is to be restored to usefulness.

The recognized effectual measures are "nature's processes"—rest, good food, fresh air and sunshine, and graduated exercise. Adjuvants are medicine, surgery and artificial pneumothorax.—(*Am. Rev. Tub.*, 1918, Vol. 2, No. 5.)

## The Prophylaxis of Measles.

An outbreak of measles in the *Hôpital des Enfants-Malades* gave Professor Marfan the opportunity to put various methods of prophylaxis to the test, and in a recent lecture he discusses the subject in the light of his inquiries. He insists, above all, upon the necessity for prompt isolation in all the acute infectious diseases of childhood—measles, scarlatina, varicella, diphtheria, whooping cough, mumps, and cerebrospinal fever. A trial was made of Milne's method, which is supposed to obviate the need for isolation, but Marfan states that he does not think it should in any way replace isolation. This, he recommends, should be strictly enforced with all the precautions usually carried out. In hospital practice, every case ought to be isolated separately and not put in a ward with other cases suffering, or supposed to be suffering, from the same complaint. He considers collective isolation of patients, presumably suffering from the same disease, to be very often worse than no isolation at all. He is an advocate, accordingly, for the cubicle plan in place of the large ward. In old buildings, the use of movable glass screens is suggested, as well as all measures for avoiding dust rising from the floors.

He insists upon four conditions for this essential part of prophylaxis in the infectious diseases of childhood. (1) It must be adopted at the earliest possible stage, because all these diseases are at their most infectious stage when developing. (2) All doubtful and suspicious cases and, sometimes carriers, must be isolated. (3) The period of isolation should be of a duration appropriate to each disease. (4) With the isolation certain additional measures should be adopted to prevent the carriage of infection by persons and objects.

The patient is kept thoroughly clean, and the mouth and nose sprayed daily with 1 in 50 eucalyptus oil. In scarlatina, the skin is rubbed daily with 2 per cent. eucalyptus ointment. Before discharge from isolation, the patient is rubbed thoroughly all over with alcohol after a good bath. The room occupied by the patient and every article in it that is used by him is well sprayed with 1 per cent. of solution of formaldehyde, and left closed up for 24 hours. Marfan insists, too, upon the most scrupulous attention to every personal detail on the part of all in attendance upon the patient.—(*Journ. des Praticiens*, January 12, 1918.)

## Serotherapy of Spirochaetosis Icterohaemorrhagica.

When originally introduced the immunizing serum for icterohaemorrhagic spirochaetosis was injected hypodermically, but since May, 1916, Inada, Ido, Hoki, Ito and Wani (*Jour. Exper. Med.* 1918, 283-303) have given it intravenously, and have found this method much more potent. Immune bodies could be demonstrated as complete in the patient's blood five minutes after intravenous injection of 0.5 c.cm. of serum per kilo of the body weight, whereas after hypodermic injection the immune bodies could not be detected until after an interval of eight hours, and were then not completely absorbed. As a rule 60 c.cm. of serum from an immunized horse were given intravenously, irrespectively of the degree of illness; sometimes the whole amount was injected in a single day, sometimes 40 c.cm. on one day and 20 c.cm. the next, or sometimes 20 c.cm. for three successive days.

It has not yet been settled which plan is the best. In mild cases a total of 20 to 40 c.cm. is sufficient. The best results follow early injection, and from consideration of the infectivity of the patient's blood, the distribution of spirochaetes in the body, and clinical results it appears that intravenous injection is effective up to the fifth day of the disease. The serum is spirochaetolytic and spirochaeticidal; in two cases its injection gave rise to rigors and a rise of temperature, a serum rash occurred in 3 out of 41 cases treated, but no anaphylactic symptoms were seen. Out of the 41 patients treated, 12, or 29 per cent. died, but after eliminating 3 cases the mortality worked out at 23.7 per cent., or considerably lower than cases not treated with serum.

The mortality of patients treated by subcutaneous injection was lower—17 per cent.—but this is correlated with their comparative youth. The serum shortens the duration of jaundice, and it is probable, though not proved, that if given in a pre-icteric stage it may prevent the onset of jaundice. The haemorrhagic tendency is somewhat lessened, particularly from mucous surfaces, and the incidence of suppurative complications greatly reduced. But the fever is not influenced, and the percentage of after-fever is somewhat higher, probably because more patients severely ill recover. From examination of 8 fatal cases Kaneko and Okuda find that the spirochaetes are markedly degenerated and fewer than in cases not treated by serum, and that their disappearance from the organs and tissues is not so well marked after subcutaneous as after intravenous injection, though the manner of their disappearance is the same.—(*Brit. M. J.*)

## Two Cases of Abscess of Testis Due to Bacillus Coli.

W. Gifford Nash gives a history of two cases illustrating a comparatively rare affection and one which has received very scant notice in works on diseases of the genito-urinary organs. He says:

"On February 17, 1913, I saw a gentleman suffering from acute cystitis. The urine was acid, and contained a fair amount of albumin with a deposit of pus and blood. It also contained a colon bacillus of the *Bacillus lactis aërogenes* type. Under urotropine the cystitis soon cleared up.

"In May, 1913, the patient had a mild attack of epididymo-orchitis and also suffered from boils, for which he was treated with a vaccine.

"On December 13, 1913, he was admitted to the Bedford Nursing Home under my care, suffering from high fever and swelling of the right testis and epididymis. The urine contained pus. On December 24 an abscess of the testis was opened, and the body of the testis, which had sloughed, was removed.

"On January 13, 1914, the epididymis was excised and sent to a pathologist, who found a coliform bacillus resembling the *B. pseudo-asiaticus* of Castellani.

"A vaccine was prepared and used for a considerable time. There have been occasional mild attacks of swelling of the left epididymis, and that *Bacillus coli* is still present in the urine.

CASE II.

"On August 11, 1917, I saw a married man, aged 27, suffering from acute swelling of the left testis and epididymis. His history was that while serving in the army he had an acute attack of swelling of the right testis on May 7, 1917. About May 20 the swelling was punctured and pus found. On June 1 castration was performed, and he was told that he was suffering from tuberculous disease of the testis. There was no history of urethritis. He left hospital on July 28, and was discharged from the army.

"On July 31 he returned home to his wife and sexual intercourse took place. On August 2 he had pain in the left testis and slight swelling which progressively got worse. The swelling of the testis was preceded by frequency of micturition.

"When I saw him on August 11 there was redness of the left side of the scrotum, and swelling and tenderness of the left testis and epididymis. From the history of the acute attacks in May and August I diagnosed an infection with *Bacillus coli*, and as he had lost his right testis I advised incision of the left testis with a view to letting out the infected products and saving some part of the testis. On August 12 I incised the scrotum and also the testis epididymis. The testis had commenced to slough. Pus from the testis sent to pathological laboratories was reported to contain the *B. coli* and *proteus*. A vaccine was made and twelve doses were given.

"On October 25 the wound had healed, the testis was atrophied, and the sexual functions were a good deal impaired."

The cases related were both due to infection of the testis and epididymis by bacilli of the colon type. It is probable that the infection gained entrance along the vas deferens, as in both cases the inflammation of the testis was preceded by bladder disturbance.

In the diagnosis of this condition we must think of acute gonorrheal epididymitis, acute tuberculosis of the epididymis, and acute torsion of the testis. In both cases the occurrence of gonorrhea was denied, and there was no history of any urethral discharge. Gonococci were not found in the urine or in the epididymis and testis. Further, gonorrheal epididymitis very rarely suppurates. In neither case was there any evidence of tubercle in the genito-urinary tract, and the acute onset and rapid sloughing of the testis did not resemble tuberculous disease. Torsion of the epididymis was not present in either case.

As to treatment, Nash believes that the use of a vaccine and early incision of the inflamed structures give the best chance of saving the testis.—(*Brit. Med. Jour.*, Feb. 2, 1918.)

## Malarial Amnesia.

From his experience in Beyrout de Brun insists on the frequency of loss of memory as the result of malarial infection, as shown by its presence in nearly a third of the patients under his care in a military hospital there. It is indeed remarkable that so little attention has been paid to this manifestation. It may, however, be easily overlooked, especially when it is unaccompanied by other nervous symptoms. Sometimes it is combined with headache, giddiness, cramps, tremors, formication, and be a prominent symptom of malarial polyneuritic psychosis. The occurrence of loss of memory may be considered under the two heads of (1) the febrile paroxysm and of (2) the subsequent periods. During the fever there may be complete loss of memory, so that a complete gap is left. This may involve the events of a few hours and is then permanent and absolute, or the duration of amnesia may be prolonged for weeks and is then less complete, and there may be a transitional stage between the period of good memory and that of more or less complete blankness. After the fever patients may have lost their memory for events before the malarial attack, and this may extend back to childhood, or their loss of memory may affect the events of the recent past and the present, so that the patients are obliged to write everything (notebook sign); there is then considerable loss of maintaining attention.—(*Presse Med.* XXV, 1917.)

## The Histo-Physiology of Nerve Repair.

In spite of the most adverse circumstances the spirit of scientific research that animated certain small yet active and productive medical schools in Belgium in happier days has not deserted our dispossessed confrères, and it is no less gratifying than stimulating to learn of further contributions emanating from establishments that can scarcely be other than makeshift. Thus, at La Panne sporadic bombardments have not quenched the flame, as witness the volume of *Travaux de l'Ambulance de l'Océon* there situated. In the latest fasciculus to be issued is a long communication from Professor A. P. Dustin, of the University of Brussels, on the histo-pathology and histo-physiology of nerve injury and nerve repair, a matter which is very much to the fore in these times.

Professor Dustin furnishes a remarkably complete account of the microscopical changes in the central and peripheral segments of injured nerves, based on the examination of cases varying from a few days or less to a couple of years or more in duration. A painstaking description is given of fibrillation of the axones, the spirals of Ranvier-Perroncito, the irritative and regenerative phenomena in the syncytium of Schwann, the reactions in vascular and connective tissues, all of which are illustrated by beautifully clear drawings. In a subsequent section attention is directed to the difficult question of the mechanism of nerve regeneration and the interpretation of the microscopical picture. Here, we venture to think, Professor Dustin scarcely does justice to the arguments of the peripheral school, as one may say, who hold that regeneration in the isolated peripheral section of a cut nerve is a histological fact. He has not, apparently, had a chance of referring to the work of the Late Dr. Alexander Bruce on multiple neuromata of the central nervous system, by which study the possibility of peripheral regeneration is materially strengthened.

For that matter, Professor Dustin's fine research work seems to have been devoted disproportionately to the changes in the central ends of injured nerve-trunks. Be this as it may, one of the more convincing sections of the paper is concerned with the orientation of the regenerating axones across the cicatrix to the peripheral end according to the principle of what he terms odogenesis, in opposition to the more commonly accepted view of neurotropism. Cajal supposes, in the case of the latter, that substances are actively secreted by the proliferation of the cells of the sheath of Schwann, which substances exercise a chemiotropic action on young axones and so orient them into the appropriate channels. Nageotte has raised the serious objection that if this were the case young developing axones would never leave the central ends of the sheaths in which they already find themselves. By odogenesis is meant the process whereby young axones follow paths formed by embryonic connective tissue cells and by the cells of the sheath of Schwann; through interstices thus made the axones penetrate to the peripheral end. The last section is assigned to a consideration of many practical points dealing with the technique of operative interference.—(*Lancet*, April 20, 1918.)

## Organic Paraplegia Due to Lightning Stroke.

Paralyses are not rare in persons who have survived being struck by lightning. They are, however, commonly functional paralyses, and have a good prognosis. A. Porot (*Revue Neurolgique*, Paris, 1917, xxiv 13) has recently described three cases in which the physical signs pointed to organic rather than functional paraplegia due to lightning stroke. The patients were Serbian soldiers. In August, 1916, on the Macedonian front, a number of these men were reposing under a tree during a thunderstorm, in spite of the general belief that it is unwise to take cover under trees during thunderstorms, when the lightning struck and killed four of them. Others were struck and survived, and two of these were under the author's charge six and eight months after the accident. One had very extensive scars of burns on the right chest, iliac fossa, thigh and knee. He was unable to stand or walk, exhibiting intense spasmodic paraplegia, with much wasting of the muscles, particularly in the left thigh and right leg. The left quadriceps extensor showed clonic spasms while at rest; there was patellar clonus and an extensor plantar reflex on the right side, while no plantar reflex could be obtained on the left. On both sides the abdominal and cremasteric reflexes

were increased. Both legs were insensitive to touch, pain and heat up to a level some two inches above the patella, and there was similar hypo-aesthesia of the trunk and arms up to the base of the neck. The sphincters were not involved.

The second patient was less badly burned, and, by May, 1917, had to a great extent recovered. He still exhibited, however, permanent diminution of sensation (touch, pain and heat) in various areas of the left leg, especially those supplied by the second lumbar and first and second sacral segments, with loss of sensibility to heat in the same areas on the right. The third patient, who was not under Dr. Porot's charge, had not lost his senses when he was struck (as the other two had), but was suddenly seized with paralysis while marching next day. By June, 1917, he had greatly improved, but showed much increased reflexes, ankle clonus on both sides, patellar clonus, and a feeble extensor plantar reflex on the left. He also had a traumatic cataract in the right eye, dating from the accident.—(*Brit. Med. Jour.*, Feb. 2, 1918.)

## The Lymphatic System and Tuberculosis.

The *American Review of Tuberculosis* for February discusses in its editorial the relationship of the lymphatic system to infection and to hypersensitiveness or relative immunity to tuberculosis. Because of its anatomical relationship the lymphatic system, draining every part of the digestive and respiratory tracts from which practically every tuberculous infection arises, is in itself almost invariably infected either in its vessels or glands. While there is therefore very commonly a disposition of tubercle bacilli in lymph glands there is as yet no good evidence to show that the lymphatic gland of the lymphocyte has a selective or specific antagonistic action on tubercle bacilli. Pigment granules are carried and deposited in the same manner, the difference between the bacilli and granules lying in the fact that the bacilli are alive, able to increase in numbers, and because of their destructive effect upon tissues to be further disseminated through the body. Lack of reactive tubercle formation to bacilli may be found in other tissues besides those of the lymphatic glands. Nor are arrest foci more frequent in lymphatic glands than in the lungs. Intestines, often literally bathed in tubercle bacilli, but remaining uninfected, liver and spleen which rarely show tubercle might be termed immune with equal justice. The only immunity known in tuberculosis, that is, the relative immunity to infection by the tubercle bacillus, is dependent upon a pre-existent focus of infection with the tubercle bacillus. Only such a focus and none of its component parts alone, or tuberculo-protein alone will produce this condition. From this point of view the work of Webb, briefly recorded in the same number of the *Review*, is of great significance and it is hoped that further refinements in his methods of lymph gland transplantations may shed light upon the baffling problem.

## Syringomyelia.

E. F. Leonard of Chicago, discussing the diagnosis of this condition, says: In its classical form the disease is distinguished by (1) its slow progressive course with periods of remission and latency; (2) by the progressive muscular atrophy combined with the peculiar dissociated disturbances of sensibility. The anesthesia in syringomyelia is usually radicular in type, that is, it follows the course of the posterior roots, and is sharply limited by straight lines, ending abruptly; (3) by the trophic disturbances and scoliosis. But as certain cases may show predominant forms of lesion, such as motor, sensory, trophic or secretory, it may be necessary at some time during its course to differentiate it from such conditions as amyotrophic lateral sclerosis, atypical multiple sclerosis, tabes, neoplasm of cord, neuritis, meningomyelitis (luetic), muscular spinal atrophy, and muscular dystrophy.

Occasionally syringomyelia has been found co-existent with hydrocephalus, atrophy of the cerebrum and cerebellum and with congenital conditions, such as spina bifida.

Some text-books assert that the differentiation of syringomyelia from other diseases is made by the presence of the phenomena of sensory dissociation, at one time supposed to be pathognomonic. It is contended by some writers that syringomyelia can exist without the dissociation syndrome and the dissociation can exist without the syringomyelia. This so-called syringomyelic sensory dissociation is, as Grasset first demonstrated, nothing more or less than a localization sign, the expression of a mere anatomic state. As a syndrome the syringomyelic dissociation has been seen in hydromyelia, hematomyelia, and in other disorders which affect the posterior nerve roots, *i. e.*, in various forms of neuritis, Morvan's disease, and anesthetic leprosy, in Pott's disease of the spine, locomotor ataxia, extra-medullary tumor of the cord, mixed cases of injury to the cord and nerve roots, and in cervical pachymeningitis. It has also been observed in hysteria, and has been induced by suggestion.

It is not the dissociation of sensation which points to the syringomyelia, but it is the dissociation of sensation with certain other clinical manifestations.

From a physiological point of view this disease is interesting to the student, as it may implicate so many pathways and centers in its progression that it is necessary to have a knowledge of the anatomy and physiology of the centers in the bulb, and in the cord, of the projection tracts, and of the upper and lower motor neurones to explain the symptomatology. He can also study with profit and pleasure the theory of sensations. There are today, three general hypotheses or conceptions of the origin, nature and course of sensation. Sensory dissociation, as a biologic fact, did not provoke any very extraordinary interest until it was recognized as a symptom of syringomyelia.

1. There is the anatomic conception: for every special form of sensory manifestation there is a special nervous element.

2. The psychologic conception: it insists that sensation itself, and above all, every form of sensory differentiation, is a pure content of the mind; strictly a psychosis.

3. The eclectic (this word does not refer to a school of medicine) conception: it attempts to harmonize the two preceding somewhat opposing views. It acknowledges that sensation is a psychic content, even a psychic product, but it also maintains that it is the result of a definite, definable physiologic process in a sort of a specific neural apparatus.—(*Med. & Surg.*, Vol. II, No. 3, 1918.)

## Measles, Whooping-Cough, Pneumonia, Pneumo-Thorax—Recovery.

Sidney Matthews makes this succinct and interesting report:

Peggy P., aged 7, became ill with measles January 1, 1918. Apparently well and downstairs on January 20.

January 26.—Bronchial catarrh. In bed again.

January 31.—Well-marked whoop. Continued in bed. Not so well February 7.

February 10.—Developed broncho-pneumonia, especially pronounced in the lower part of both lungs at the back of the chest.

February 14.—Temp. 106°. Child natural very ill. Gradually began to improve with falling temperature until February 21, when temperature began to rise again to 104°. Then steadily improved until March 1, when whoop became again well-marked.

March 7.—Not so well. Temp. 103°.

March 10.—Sudden access of pain (after coughing) in the left lower back of chest. Examination revealed hyper-resonance over the lower half of left chest back and front, some hyper-resonance in right lower back of chest.

March 11.—Apex beat in axillary line on right side. Pulse 160. Resp. 80. Temp. 101°. Classical signs of left pneumothorax. Left side enlarged and immobile. Metallic echo—bruit d'airain, etc

March 16.—Heart apparently failing; small dose of strychnin given hypodermically, and continued with oxygen. Gradual improvement followed. Warm weather March 22. Child carried down and laid in garden.

March 1.—Started solid food. Still some hyper-resonance left back, heart coming back to middle line.

April 14.—Physical signs disappeared. Apex normal position. Child sitting up.

April 20.—Child able to walk.

May 1.—Went to bear and in a few days running about on the sands.

Interesting points are the negative T.B. test of sputum, the extremely high temperature in the attack of pneumonia, the apparent sudden rupture of some air vesicles due to the violence of a whoop in a lung damaged by pneumonia, the very rapid and complete displacement of the heart by the large amount of free air in the pleural cavity, and the complete recovery of the lung without at any time any sign of pleural effsion, which is supposed to be the method by which tears in the lung are hermetically sealed and by which recovery takes place.

The treatment consisted mainly in keeping up the child's strength and unlimited exhibition of oxygen.—(*Practitioner*, June, 1918.)

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The X-ray arrests the tuberculous process by its inhibitory action upon the causative organisms, promotes the absorption of inflammatory products, and causes an atrophy of the glandular structures and their replacement by fibrous or sclerotic tissue.

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Radiotherapy properly applied invariably exerts a most favorable effect in tuberculous adenopathies in the various stages of the disease.

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## NEW YORK, NOVEMBER, 1918

### Surgeon General Ireland, U. S. A.

The appointment of Major General Merritte W. Ireland, U. S. A., as Surgeon General of the army, succeeding Major General W. C. Gorgas, will receive the approbation of all men interested in the army and its medical, surgical and sanitary requirements. Gen. Ireland, who has been Chief Surgeon of the American Expeditionary Forces in France since July, 1917, is one of the outstanding figures in the army medical corps. He has long been dominant in that organization and takes into his office wide executive experience, a profound knowledge of his profession, administrative ability of the first order and the sincere respect of his colleagues.

General Gorgas went on the retired list October 4th, recognized as one of the world's leading sanitarians. The country will continue to have the benefit of his valued services, as he is to become the medical representative of the United States Army in the Supreme War Council at Versailles. The inexorable law of retirement at the age of 64 removes General Gorgas from the active list of the army, but it is the earnest hope of his world measured admirers that he will long be spared to advise his associates along those lines which appeal so keenly to his scientific mind.

Another change is the appointment of Brig. General Robert E. Noble as a Major General and as Chief Surgeon in France, succeeding General Ireland. The advancement of this youthful and energetic Southern gentleman from Major to Major General in less than 18 months is a well deserved tribute to his splendid ability as an administrator. His work at the head of the Division of Hospitals of the Surgeon General's office in itself warranted his advancement. General Noble will prove a worthy successor to General Ireland in France.

The remarkable success of the Medical Department in France is due in great measure to the unusual organizing ability of General Ireland. He was designated Chief Surgeon by General Pershing soon after reaching France and at once put into operation plans which have resulted in an almost perfect scheme of hospitalization in the zones of war.

The new Surgeon General is 51 years old and was graduated from the Detroit College of Medicine in 1890 and from Jefferson in 1891. Entering the army as an Assistant Surgeon in 1891 he was from the first regarded as a promising officer. He served in Cuba and the Philippines in the Spanish-American War and was commended for his work at the battle of Santiago. General Ireland spent from 1902 to 1912 as a Major and one of the principal assistants in the Surgeon General's office in Washington and was made Colonel in May, 1917, when he was at Fort Sam Houston, Texas, under General Pershing. He was appointed Brigadier General in May, 1918.

The three generals, in their new spheres of action, carry with them the best wishes of a united medical profession and the esteem and regard of their colleagues in the Army Medical Corps. If past performances count they will each render yeoman service to the country and will add new honors to the many already bestowed.

### A Warning.

One encounters frequently in the press a frankly expressed desire that somebody in Germany assassinate the Kaiser, or that the Bolshevik rulers of Russia be dynamited by one of their countrymen. Such sentiments are also expressed with fervor and frequency by various publicists. Consequently one is beginning to hear the men in the street expressing similar hopes.

While in the circumstances such emotional reactions have been bound to supplant, in the minds of persons especially sensitive to the significance of the acts of the hated autocrat of Germany and the oppressors of the Russian bourgeoisie, the feeling that St. Helena would be severe enough punishment for these offenders, nevertheless the passionate expressions that such emotional reactions tend to occasion seem unwise, for they may lead to unexpected boomerang effects through the medium of some of our paranoiacs, who need only a suggestion or two to set them off on dangerous business.

Just as the gruesome recitals of atrocities in Europe have undoubtedly modified our lynching fashions—for the worse—through their suggestive effect upon the "minds" of imbeciles, paranoiacs and degenerates of all kinds, so may suggestions of assassination react dangerously upon cranks, and lead them to commit acts of violence against our public officials.

A certain type of movie which is now hawked about the country is heavily charged with TNT of the sort which we have indicated.

Perhaps the greatest danger from these things will come in the period of reconstruction after the war, when the intensively cultivated passions of our numerous degenerates will have to find other objects than hated figures in the enemy countries.

### Nothing New Under the Sun?

The moderns eat candy, but our forefathers ate honey. The soldiers in France eat chocolate, but Xenophon's ten thousand did not lack wild honey. Probably for everything we have there was an ancient equivalent. There was more "new knowledge" acquired in Europe in the thirteenth century, of a superior, not to say transcendental, kind, than even Kultur has attained. Now it is the movies, but in former times there were morris dances and religious processions to delight the crowd. Once there was the Field of the Cloth of Gold, but soon there will be a conclave of the Allies at the gates of Berlin!

It is much the same way in medicine, after all. The ancients did not lack clinical resources; rather they possessed a wealth of them, and they were not all ineffective, by any means. Was not intubation practiced 400 years B. C.?

The Hippocratic school handled sick people very wisely. It was an axiom of the Father of Medicine that no possibly harmful risks should be taken if no positive good could be effected. That principle was certainly equivalent to clinical beneficence to any modern doctrine or system of healing.

The ancient priest-physician probably impressed his patients psychically more than we do. Now the neurotic goes to an office on a city street, and sees a gentleman who looks more like a prosperous broker than a disciple of Esculapius, but in Hellas the neurotic went to a temple and interviewed a representative of the god of medicine.

Despite some of his doctrines, Galen probably gave the Roman gladiators good practical care.

Too many of our judgments of the Montpelier school are derived from the satires of Molière. The practitioners of his day and country were undoubtedly better equipped than some of the healers now licensed by the state to treat the sick osteopathically and otherwise.

It is not at all unlikely that Dr. John Hall, Shakespeare's son-in-law, got as good results in acute diseases from the exhibition of simples as we get with our therapy.

Prayer by a pious physician in a superstitious age may have been, in general, as efficacious as our proprietaries.

Mackenzie is authority for the fact that the discoverer of digitalis understood very well, 125 years ago, what we now call auricular fibrillation. Such work has been believed by all of us to belong in the domain of modern cardiac investigation.

We must discount the older physicians' handicaps in respect to almost universal popular ignorance, bad sanitation and poor nursing, which is not to say that they had no prescience regarding the coming development of public health measures.

In the course of our advances we moderns have unquestionably forgotten some useful medical arts. There are those who believe that certain phases of the art of obstetrics have declined in the face of the Cesarean and other crazes. It becomes a serious question as to the reality of our advances if we lose touch with old measures perhaps more important than those which obsess us in the present.

Some of our "discoveries" have been revivals, like the interdiction of salt in nephritis—a Hippocratic injunction.

How does the eternal account balance up, as regards total results? Is there any less disease in the world? There is but little leprosy, but tuberculosis has taken its place, and cancer promises to take the place of tuberculosis. Our dental pathology is not a reassuring feature of our boasted civilization.

There would appear to be nothing essentially new under the sun, for men still sicken and die in much the same old way; pernicious anemia remains a sardonic opprobrium, while infant mortality is really alarming; and the degenerative diseases of middle life are not decreasing.

There is nothing lugubrious about this review; it is a glorification of our professional forefathers' record. For their time, they were perhaps better physicians than are we. This is a defense of colleagues. We like to think of them as colleagues—as really part of the profession of to-day. Eliminate the element of time and they become colleagues literally. This may be a Hibernian point of view, but we stand by it.

At any rate, it cannot be denied that upon their heritage all of our own science is based, and that at no time in the past was there not some physician giving really capable service to some sick man, perhaps masterfully refraining from urethral tinkering in gonorrhea, not alone because he did not have an urethroscope and the silver salts. The harm that we sometimes do in our clinical aggressiveness he may have more than offset by his discreet inactivities.

As to syphilis, we forbear—but the effort of suppression is severe, in the light of recent statistics.

We think that many of the theories and methods of former days were ridiculous, but he would be an engagingly simple man who would insist that none of our doctrines and practices are silly.

The physician himself is not a new phenomenon; in him the ancient physician lives again; it is like the continuity of the germ plasm; the performance is eternal and the guild is everlasting, but no more or less noble to-day, or, we dare to say, capable, for not yet are we the masters of nature, nor ever shall be.

All this is not to say that progress is impossible, for much remains to be *rediscovered*.

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### Necessity of Food Reserve.

The effect in England of the greatly increased shipments of meat from this country during the past two months is indicated by a cable received from the British ministry of food.

During April, 359,058,000 pounds of beef and pork products were exported, as compared with 161,000,000 pounds in April, 1917, and 43,700,000 pounds in April, 1914, before the war began. The total exports of meat products last April were therefore about 220 per cent. of exports in the same month last year and about 830 per cent. of those in April, 1914.

The cable which follows emphasizes the necessity for building up a food reserve against any contingency and urges that there be no slackening of effort on this side of the Atlantic:

"Thanks to the splendid response from America the shortage which was threatened in beef and bacon is now no longer as serious as it has been during recent weeks, and the meat ration, which was reduced, from the workingman's point of view, almost to the vanishing point has now been restored to the normal amount under the compulsory rationing system. The willingness with which the population as a whole has accepted compulsory rationing and the success of the rationing arrangements have produced a marked decrease in consumption, and this also naturally eases the food situation.

"Supplies of butter and cheese, however, are still inadequate to meet the requirements, but it is hoped that imports from America will remove anxiety as regards our position in these commodities.

"The fact that it is now feasible to maintain the scale of compulsory rationing must not be taken to mean that there is any surplus of food in the country. Under conditions of war such as this it would obviously be an elementary precaution to build up as large a reserve of food as possible in an island which is menaced by submarine blockade. No such reserve is yet in sight and there should be no slackening in American efforts to provide foodstuffs for the allied nations."

# Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

### A New Form of Quackery.

It is not only the patent medicine sharks, the promoters of cults, the founders of new religions, and the purveyors of new health systems who batten upon the neurasthenic and the psychasthenic, the feeble-minded and the constitutionally inferior weakling. We now have with us certain gifted parties who ascribe all failure in life to lack of will power. The textbooks in which are the simple exercises, "more fascinating than any game of cards or any sport," whereby the weak-willed may readily acquire dominating power, generally cost about three dollars.

The advertised testimonials to this new system for making silk purses out of sow's ears usually read something like this: "An hour after I opened the book I felt like a new person. My sluggish will power was beginning to awaken. There was a new light in my eye, a new spring in my step, a new determination in my soul. I began to see, in my past, the many mistakes I had made, and I knew I would never make them again."

Chapter captions in a typical textbook run about like the following: How to Develop Reasoning Power; The Secret of Building Mind Power; How the Will is Made to Act; How to Test Your Will; The Six Principles of Will Training; Definite Methods for Developing Will; The Ninety-Nine Methods for Using Will Power in the Conduct of Life; Seven Principles of Drill in Mental, Physical and Personal Power; How to Develop a Strong, Keen Gaze.

Every man, declares the typical textbook, has within himself every essential quality of success except a strong will. The successful man is generally inferior to the failures in every way except in will power. Without a strong will, education counts for nothing, money counts for nothing, opportunities are useless.

There would appear to be absolutely no reason why any ambitious person should not, through reading one of these textbooks, be able readily to Prussianize his fellows. Perhaps the Kaiser subscribed for one of these books sometime in 1913 and was then able successfully to expose his well known "will to power" to the astonished gaze of the world.

And the beauty of the system is that it is especially designed for and appeals only to those whose wills are weak and paralyzed, or who have never had any will power discoverable by ordinary or even extraordinary tests. Moreover, it isn't like taking a course in motor mechanics, which takes time and effort and blackens one up a good deal—all one has to do is to buy a book costing three dollars, curl up in a Morris chair, light a pipe, and then read the book for about an hour.

Despite the scarcity of paper such books must clearly not be permitted to fall under the ban of the regulating authorities. Better indeed that the *Congressional Record* should be scrapped, and Creel's Bulletins withdrawn, than that these precious creature should cease to transform the numskulls who purchase them into Napoleons. Should not a Bureau be organized to expedite the conversion of books into Bonapartes?

### Beer.

In connection with the ban on beer it is well to bear in mind the researches of Professor J. S. Sharpe of the Department of Physiology in Glasgow University, which have shown that while the alcohol, sugars and dextrin contained in beer play but a small part in nutrition, much account must be taken of the vitamines which it carries by virtue of the yeast used in its manufacture.

It remains to be seen what the practical results in the field of labor will be as a consequence of the Government's necessary ban on beer.

From one point of view it would seem that beer has, in the past, supplied a possible vitamine lack in the diet of the working man. In Great Britain the Central Control Board of the Liquor Traffic was obliged to restore partially the beer ration of the workers.

During the past three years drunkenness has been enormously reduced in Great Britain, while the efficiency of the workers has been largely increased, seemingly because of a rational solution of the beer problem.

While there has been no other way out for our Government, because of economic necessities having to do with the wastage of fuel and grain and labor in the breweries, and because of the strain upon transportation involved in the shipping of beer, nevertheless the industrial consequences of the withdrawal of beer from the market may turn out to be serious. Nothing comparable to what happened in Russia after the vodka edict could be conceived as threatening America. There the consequences were social and political; here they would be purely industrial. Let us hope that the consequences will not prove inimical to the country's great program.

# War Medicine and Surgery

### War Wounds of the Lung.

P. Duval has collected 3,453 cases of lung wounds reported by 37 different surgeons, showing a mortality of 20 per cent and has presented the matter in book form. The mortality falls in general with the distance from the front. Hemorrhage and asphyxia due to mechanical interference with respiration are the two principal causes of death. In the French army all chest wounds are considered as not transportable and are held until in good condition in the first hospital that is equipped to receive them. The high mortality is due to the frequency of wounds by artillery projectiles, in which case the gaping chest wounds give double the death rate seen in the closed wounds.

Bullet wounds infrequently call for operative interference. Shell wounds, if the fragment is small and passes through, may be clean-cut, but if large, may cause ragged, deviating wounds with a large point of exit. The fragment may be retained or passed through; in either case bits of clothing or pieces of rib may be left. The latter often set up severe suppurative pleuropneumonia. The tissue about the wound may be dead, cold, and non-crepitant, and densely infiltrated with blood. It is strange that in so vascular a tissue a lung hemorrhage is not severe unless large trunks are severed. The opposite lung may be a sort of "contre-coup" and be the seat of marked congestion or purulent pleurisy.

Severe massive hemorrhages may be immediate or late. The immediate hemorrhage may be imprisoned and may stop by self-compression but this adds the risk of cardiac and opposite lung embarrassment. These hemorrhages may recur after transportation. It is in this way that late intrapleural hemorrhages occur. Hemorrhage and shock are difficult to differentiate. Aspiration is a valuable aid in determining bleeding, but X-ray is of value only when the patient is sitting. The blood-pressure readings, taken half hourly, if falling indicate hemorrhage, which demands operative interference with an attempt at direct hemostasis. Duval has 70 per cent of recoveries in 21 desperate cases of this type.

Bullet wounds and small shell fragment wounds not complicated by bits of clothing, etc., frequently have a sterile evolution but are often complicated by pulmonary congestion or mild pleuropneumonia.

Wounds by large shell fragments, particularly if bone splinters have been carried in, are practically always followed by a grave anaerobic infection. If the lung is collapsed by a hemothorax, it does not readily become infected but the pleura and blood bear the brunt of the activity. But if the amount of blood is small or if old adhesions prevent collapse, the lung suffers from bronchopneumonia, septic pneumonia, abscess or gangrene. True gas gangrene of the lung has not positively occurred in Duval's practice, but a wide variety of anaerobes and aerobes may be present and active.

Hemopyopneumothorax, either free or loculated, is always grave and often fatal. The lung itself is resistant to anaerobic infection, so its wounds may be closed in order to protect the pleura.

Duval was among the first to assert that one should treat from the very outset wounds of the lung just as he treats wounds of the soft parts elsewhere. The pathology is identical and the fear of pneumothorax is unfounded. One may eventrate the lung lobe by lobe just as one does loops of intestines, palpate, incise, resect and replace with the thorax.

Projectiles may be removed with forceps, or if almost a through-and-through penetration, the lung may be incised over it. Simple removal of projectiles does not suffice. Excision of the wound is not always possible, but in wounds near the surface it is ideal. The tract may be cleaned by stripping gauze through, which drags out foreign bodies and necrotic tissue. The pleural orifices are closed to protect the pleura.

Operation should be done as early as is compatible with the patient's general condition, but thoracotomy is not accompanied by the shock of laparotomy, and because of the rapid septic evolution of shell wounds of the lung, the operation should not be deferred too long.

Bullet wounds cause operative indications only in case of large vessel section and urgent hemorrhage. Wounds from very small projectiles stand midway between bullet and large shell fragment wounds.

The term "open thorax" is used to describe those cases in which the offending missile has left a gaping wound in the thoracic wall. This gaping wound must be closed in order to overcome the resultant mechanical embarrassment of respiration and the resultant pleural infection. As a matter of fact, closure is to be considered as an emergency operation. Thévenot has practiced this type of closure 109 times, with a mortality of 24.7 per cent and a subsequent pleural infection in 8 per cent of the cases. The reason for this high mortality rate is that, according to Thévenot, the closure of the thoracic wound is regarded as the essential thing and the fact should be appreciated that such an operation is in reality an incomplete one. Unless the lung itself is attacked, hemorrhage checked, foreign bodies removed and asepsis combated, one can hardly hope for other than a high mortality.

The first point of importance under operative technique is that there should be no fear of operative pulmonary collapse. Methods of combating pneumothorax at operation are rational, but they are very inconvenient to perform, and if practiced, one must make up his mind that it will be impossible to relieve injuries of the lung. If used, either the positive or negative pressure chamber keeps the lung inflated and it must be collapsed.

It is necessary to handle the lung, to inspect it, to incise it and to swing it around on its pedicle. In order to do these various things, the lung must be in a state of collapse. All of the maneuvers described above, namely, the seizing of the lung with the forceps, separation of adhesions, traction on the pedicle, if made with gentleness, have no influence on the respiration or heart action. The respiration maintains its normal rhythm, frequency, and amplitude.

The heart is not in the least excited, and Duval has never observed any reflex disturbance of cardiac rhythm. Thoracotomy with manipulation of the lung is not a shock operation. Indeed, even those cases that come to the field hospital in a state of moderate shock should not be held until the blood pressure completely re-establishes itself, but one should rather hasten operative intervention in order to complete it before the lung enters the stage of inflammation.

The question of anesthesia has not been definitely settled. General anesthesia is, of course, treacherous in these cases, and local anesthesia is in a measure inadequate, but when local anesthesia can be used, it is the method of choice.

The chest may be opened by one of two procedures; either by making a thoracic window, or by the extensive resection of one rib. Duval has always contented himself with a simple resection of 10 cm. of one rib, followed by forcible retraction of the neighboring rib, above and below. In operations performed for the late removal of foreign bodies, the chest should be opened at the point nearest to the foreign body, but the early emergency operations call for extensive incision, so as to permit a thorough inspection of the entire lung. One should plan this incision rather with this object in view than with any preconceived notion regarding drainage of the pleural cavity. It is almost beyond question that the antero-external incision running from the axillary to the parasternal line in the neighborhood of the fifth rib gives the best exposure of the whole lung. It goes without saying, of course, that special lesions such as rib fracture call for special treatment and even demand a second incision.

The French refer to the delivery of the lung as exteriorization. When the rib has been resected, the imprisoned air of the pneumothorax rushes out in gusts. It is well to pay no attention to this and not to attempt to extract all the air but to proceed at once to treat the lung wound, leaving the removal of intrapleural air and blood for a later stage of the operation. The lung is gently seized with a light, elastic, non-crushing fenestral forceps, and by gently swinging, rotating movements, the lobe is exteriorized. It is received immediately in warm, moist compresses, and is thereupon carefully inspected on all its surfaces. After the lesion is located, the thorax opening is plugged by a thick gauze compress in order to obviate the to-and-fro movements of air during operation. The wound is then dealt with appropriately in accordance with the methods described, and the other lobes treated in turn, provided they have been injured.

It is necessary to operate as gently and quickly as possible and to get the opening in the chest wall closed at the earliest possible moment. In case there should be any evidence of mechanical interference with breathing, it is advisable rapidly to deliver the lung, plugging the chest wall with gauze. This procedure is usually followed by cessation of all respiratory embarrassment.

In case the lung is bound down by adhesions, these are divided gently and bluntly, if possible; by sharp division if necessary.

In combating hemorrhage, three methods may be used—the tamponade, suture, or ligature.

Tamponade is not to be advised except in cases where the wound is inaccessible on account of old adhesions or where the wound is large and the infiltrated lung tissue so friable as not to hold suture or ligature.

Ligature requires no explanation. It is the ideal method of hemostasis.

Suture, however, should be explained, as it is in a large number of cases effectual even when it is used merely to close the opening of a blind wound or the openings of a through-and-through wound. According to Duval, this method seems illogical, but has worked excellently in his hands.

The presence of foreign bodies in the lung requires special mention. Radioscopic examination furnishes evidence regarding the presence of metallic foreign bodies, but unfortunately does not disclose the presence of bits of clothing or even fairly good-sized bits of fragmentary bone. The infiltrated hemorrhagic lung does not permit one to palpate with any degree of certainty bits of clothing, moderate-sized bone fragments, and often even bullets.

Metallic foreign bodies may have to be removed under some circumstances, with the aid and under the control of the radioscopic screen. The foreign body is grasped by forceps inserted in the lung wound or through a deliberately made new incision in the lung substance. The wound should always be gently cleansed with a strip of gauze in order to remove possible foreign bodies disclosed by X-ray examination, or removed by use of forceps.

After the foreign bodies have been removed and the necrotic lung tissue cleaned away by the gauze strip, or when possible after a clean excision of the wound has been made, the lung wound is sutured. Care must be taken to include the depth of the wound in the suture, and to carefully approximate the pleural edges. These sutures should not have too wide a bite. This is in order to guard against their tearing out of the lung substance during inspiration.

After the lung has been carefully attended to, the pleura and pleural cavity demand attention. The lung is replaced in the pleural cavity and gentle attempts are made with gauze sponges to mop out every vestige of intrapleural blood and blood clot. It is, of course, impossible to remove all the intrapleural air as long as the chest is open. Since it is desirable, however, for the sake of the patient's comfort to get all this air out, Duval recommends that it be aspirated with a syringe after the chest wound has been completely closed. This closure of the chest wall must be done very carefully in order to avoid a leakage of air; the resected rib ends should be covered with muscle to get an air-tight lobe.

One must bear in mind that although the operation as described is sometimes remarkably simple, it is nevertheless exceptional for these patients to run other than a rather stormy

post-operative course. Pulmonary congestion is particularly frequent, and if it occurs on the opposite side also, is almost always fatal. Pain, restlessness and groaning are practically constant post-operative occurrences. The respirations are rather shallow, the pulse small and rapid, and the expectoration bloody for the first day. It is necessary that these patients should be kept in a semi-upright posture and be judiciously morphinized. The temperature, which is elevated after operation, usually returns to normal about the fourth or fifth day, and if any air is left in the chest, it is usually entirely absorbed at the end of the fifth or sixth day. Sometimes the pleural reaction is manifested by a chill, followed by a serofibrinous or hemorrhagic pleurisy, which is spontaneously restored.

From all of this it is evident that post-operative care constitutes a most important chapter. These patients must be made comfortable, and it is much more difficult to do this in war hospitals than it is in times of peace. They should be placed in a special ward where the temperature is constant and kept constantly above the usual normal level, where there are no currents of air. This ward should be near the operating room, or at all events connected with it by an enclosed warm passageway. These patients should furthermore be kept well protected by warm coverings and should not be permitted to breathe dry, cold air. It is advisable immediately after operation that they be placed in an especially warmed bed.—(*S. G. & O.*, xxvii, 33.)

## Clinical Research and the Physiology of the Spinal Cord.

The war has given us many opportunities of studying the results of gross injuries of the spinal cord and cauda equina, and this study has firmly established the physiological principles resulting from the clinical work of Hughlings Jackson, the morphological investigations of Gaskell, and the laboratory experiments of Sherrington, Langley, Anderson, and others of the Cambridge School of physiologists. To an exposition of certain of these phenomena the greater portion of the last number of *Brain* (vol. xl., Parts 2 and 3), edited by Dr. Henry Head, is devoted. The number opens with a review of the innervation of bladder and urethra, by Dr. E. G. Fearnsides, giving a retrospect of knowledge upon the involuntary nervous system and its relations with the lower portion of the spinal cord. Dr. Head and Captain G. Riddoch follow with a paper on the automatic bladder, excessive sweating, and some other reflex conditions, while in a third paper Captain Riddoch discusses the reflex functions of the completely divided cord in man and compares them with those of less severe lesions. All these authors agree with Sherrington that inhibition is one of the most fundamental and universally applicable of all physiological conceptions.

In his masterly work on the integrative action of the nervous system Sherrington showed more than a decade ago that the basis for understanding the activities of the central nervous system must be sought in its integrating and adapting functions and the investigations now recorded by Head and Riddoch, and by Riddoch alone, serve to emphasize the importance of the mechanism which Sherrington has called postural in determining the type of response in a man whose spinal cord has been severely damaged. So long as this mechanism is intact, the impressions which constantly pass from the otic labyrinths and somatic muscles to the cerebellum, pons and midbrain determine a state of tonic contraction in the group of anti-gravity muscles. When the damage is severe enough to destroy the postural mechanism the lower portion of the spinal cord is found to react to stimuli of whatever origin in a manner called mass-reflex by Head and Riddoch. Whenever the cord reacts in this massive manner three types of adaptive response only have been determined:—

(*a*) *Protective:* A uniphasic withdrawal of paralyzed parts after "harmful" stimulation ("flexor spasms"). (*b*) *Excretory:* By this form of activity the contents of the bladder and rectum are discharged, whilst the skin over the parts supplied through sympathetic fibres derived from the freed portions of the spinal cord is excited to intense sweating. (*c*) *Sexual:* A primitive type of reaction which is excited to activity by stimulation of either the external organs of generation or of the paralyzed parts.

Whenever, on the other hand, the postural system can be proved to be still active, differentiation of somatic and visceral activities is found, the massive type of response ceases, and the phenomena of inhibition, as shown by a limitation in the range of efferent motor responses, make their appearance. The reactions obtained from the central nervous system are now di-phasic or multi-phasic, while somatic and visceral responses are separated. The receptive field for the flexion-reflex, for example, now no longer extends over the whole of the paralyzed regions. The clinical investigations recorded in these papers further go to prove that the thoracico-lumbar outflow of the sympathetic nerve fibres, which pass into the involuntary nervous system, regulate sweating and control the functional activity of the bladder, are at origin segmentally arranged; and that the arrangement is closely similar to, if not absolutely identical with, that which Gaskell, in 1886, showed to be true for lower mammalia. In their course these efferent fibres are closely associated with afferent fibres passing similarly from the viscera, blood-vessels, and other parts supplied by the afferent fibres. As a part of the generalized "mass-reflex" in cases of severe injury to the spinal cord, excessive sweating takes place over areas of skin supplied by sympathetic nerve fibres originating below the level of the lesion. Even when the bladder is freed from all central nervous connections and control, it may begin to expel its contents automatically as early as 25 days after the injury. The form assumed by the activity of such an automatic bladder is entirely independent of the site of the lesion in the spinal canal.

In the absence of the postural mechanism automatic evacuation may be facilitated by the most various afferent impulses passing into the lower portion of the spinal cord, unless a cauda equina lesion prevents the impressions from reaching the cord. Through the afferent fibres associated with the sympathetic outflow, and reaching the bladder via the hypogastric nerves, a patient may be conscious of alterations of tension within his bladder and yet be totally unable to effect by conscious effort its automatic activity. The lesson is drawn that in cases of spinal lesion, whether due to injury or disease, it is essential to avoid exercising undue tension on the bladder wall when washing out the bladder; undue pressure diminishes the power of spontaneous evacuation and retards the recovery of the vesical musculature. We offer our congratulations to the authors named upon a piece of brilliant clinical research.—(*Lancet*, Ap. 13, 1918.)

## An Extreme Modification of Local Tetanus.

Cecil Worster-Drought, temporary captain, R. A. M. C.; neurologist, Royal Herbert Hospital and tetanus inspector, Woolwich district, says cases such as the present frequently pass unrecognized as local tetanus, no doubt partly owing to the fact that the patient may not complain of the condition, assuming that any symptoms he may experience are merely the result of the presence of the wound. Even when the recognized prophylactic treatment has been carried out, such conditions are not altogether rare; they probably represent tetanus in almost its extreme modifications. These cases should be watched for and reported as local tetanus, as one is justified in assuming that if the course of prophylactic injections of antitetanic serum had been less complete, more severe tetanus would have resulted.

S. E. was wounded by shrapnel through right thigh on November 12, 1917. Later in same day, according to field medical card, wounds excised; 750 units of antitetanic (A.T.) serum. On November 25 wounds were stitched up at base hospital. Three further prophylactic injections of A.T. serum (500 units each) were given at weekly intervals. A short time after last injection (on December 3) the patient began to experience occasional "twitches" in injured thigh; for some days, he stated afterwards, limb had felt somewhat stiff.

On December 7 he was evacuated from France to England. The condition, however, passed unrecognized, and no doubt, owing to inability to flex leg at knee, the case was regarded as one of possible injury to sciatic nerve. To determine such a condition he came under our observation on January 3, 1918.

The history then obtained, in addition to above, was as follows: From time to time the leg would give spontaneous "jerks"; these were very infrequent (four or five in day). Occasionally such a twitch if anybody came near him. Beyond this, only sleeplessness and occasional pain in region of wound; no restlessness, hesitancy of micturition, dysphagia, etc.

Physical signs were as follows

Anterior wound in mid-line of thigh, 5 inches below Poupart's ligament; practically healed. Posterior wound just above right gluteal fold, about 1½ inches from natal cleft; had healed eight days previously. Below anterior wound there was well-marked rigidity of quadriceps extensor muscle, chiefly involving rectus femoris, and extending downwards for about 5 inches; above wound rigidity extended upwards for about 1½ inches. On account of this rigidity patient was quite unable to flex leg at knee. In posterior part of thigh a moderate-sized mass of "wandering" oedema was present, which on palpation somewhat obscured condition of hamstring muscles. All other muscles, however, appeared moderately flaccid, although patient experienced considerable difficulty in

moving foot. Knee-jerk not elicited; patellar clonus absent; tendo Achillis jerk brisk, equal with that on left side; no ankle clonus. Plantar reflexes flexor. No evidence of injury to sciatic nerve; all sensation normal; all muscles normal to electrical stimulation.

Treatment and progress continued as follows:

January 3, 1,500 units A.T. serum intramuscularly; 5th, 500 units subcutaneously; 7th, able to move foot freely and flex knee to very slight extent. All local spasm had ceased; leg caused no pain; muscular rigidity as before; 8th, 500 units A. T. serum subcutaneously; 13th, he complained of sleeplessness and occasional slight twitching at knee, not brought on by any particular action.

January 14th, 500 units A.T. serum subcutaneously, and repeated daily up to 17th; 20th, rigidity of quadriceps considerably less; spasms had again disappeared; patient able slightly to flex leg at knee; 26th, quadriceps muscle appeared quite supple; he was beginning to flex leg well; no voluntary movement possible as regards extension at knee. This was not due to injury of anterior crural nerve, as all muscles supplied by this nerve responded normally to faradism and to condenser discharges. The "wandering" edema had practically disappeared.—(*Lancet*, June 1, 1918.)

## Hereditary Eye Defects.

The relation of hereditary eye defects to genetics and eugenics is the subject of an article by Lucien Howe, Buffalo. After defining the terms, he gives his objects in preparing the article, namely, to formulate a plan by which ophthalmologists may relate their clinical facts to the data of genetics and eugenics, and how each one can contribute something to the common fund of knowledge concerning it, also to relate his own studies thus far, and suggest a plan that may be of use in preventing hereditary blindness. He explains that it is not intended to cover all the ground in this article, but limits himself, somewhat, to the question of the relation of these eye defects to Mendel's law, which law he explains for the benefit of those unacquainted with it. The other principles of heredity are also noted, and he mentions some of the works which give information in regard to the matter, the reading, however, should be supplemented by a few experiments. Of course, we never find the typical Mendelian ratio in the human species, because brothers and sisters never marry, but an approach to these ratios is constantly met with, and Mendel's law furnishes an important guide, not only in distinguishing heredity from infections, etc., in family histories, but also in helping us to see whether the defect is dominant or recessive. The fact is, that a considerable portion of defects formerly considered hereditary are really due to some more or less obscure infection. Other diseases besides syphilis are undoubtedly transmitted from parent to child.

Besides the elements of "possible" and "probable" defects, and the "recessive" and "dominant" factors in heredity, the personal equation of the parties to a marriage contract should be considered. Temporary obsessions of persons asking opinions should not be an excuse for not giving an honest judgment. The ophthalmologist's opinion in regard to cases that come before him asking the advisability of marriage are stated as follows: "A few illustrations will show how these four cardinal conditions in our problem may serve as the basis for an opinion by an ophthalmologist when he is called on to give advice in the case of a proposed marriage. Thus: A. When we have to do only with a deformity, and its reappearance is doubtful, no special objection need be raised. B. When we have to do only with a deformity, and its reappearance is probable, the parties to the marriage should both be warned of the probability of the reappearance of that defect in their offspring. C. When we have to do with blindness, and its reappearance is doubtful, a stricter attitude toward the union can be assumed. D. When we have to do with blindness and its reappearance is probable, the question assumes its most serious aspect.

"If the family history shows that this defect is in reality dominant, then half the children on the average will develop the defect; even if the defect is recessive, but occurs in both families, the danger is the same."

After the couple are already married, and without ancestral or personal history of eye defects, some of their children are born blind, a few facts properly presented in regard to the question are enumerated; first, the number of such cases is estimated as about 8,000 and upward in the United States, causing an annual expense of nearly $4,000,000, and the longer we delay action to prevent such cases the more difficult the problem becomes. Eugenic laws for sequestration or sterilization of such cases have been proposed and details published. lem is before the medical profession, more especially its ophthalmologic specialists.—(*J. A. M. A.*)

# War Activities

### Army Reconstruction Hospitals.

Lieut. Col. Charles W. Richardson, acting director of reconstruction work in Army hospitals, states that as a result of the fighting about eighty per cent. of the wounded will be sent back to the line after treatment in the hospitals in France, while the remainder will be gathered in base hospitals until they can be transported aboard Navy transports to this country. After arrival here they are distributed to the base hospitals throughout the country, each man being sent when possible to the station nearest his home. At present there are twenty-six of these hospitals and more will be organized. Maj. Gen. Robert E. Noble, U.S.A., Director of Hospitals in the United States, has been on an inspection trip with a view to locating new hospitals and for the conversion of Army posts into base hospitals. Most of these hospitals have 1,000 beds each, but some are designed to accommodate 3,000 patients.

Reconstruction work is carried on in all of these institutions, there being only two or three special hospitals, such as the one in Baltimore, Md., for the blind. The patients are divided into three classes: Those who will be able to return to full military duty, those who can be trained to render limited military duty, and those to be discharged when they are capable of self-support. The Reconstruction Division is coordinating its work with all other branches and forces for the good of the sick and wounded. They are classifying the men into groups and training them with a view to their future usefulness both in this war and in the times to come after the war. For this purpose they need the best educators in the country. Women between twenty-five and forty years of age, of sound physique and trained for this work, are badly needed for the instruction of the men. The pay of these aids is $60 a month, with increase for foreign service, rations and a uniform.

### New Army Hospitals.

The conversion of the present tent camp at Camp Mills, Long Island, N. Y., into a cantonment for the accommodation of approximately 50,000 has been authorized. The estimated cost is $10,890,000. This figure includes the cost of the regimental infirmaries which are to be constructed within the camp proper. A 2,000-bed hospital is also to be erected in connection with Camp Mills, but will be built at Mineola, L. I., to cost $2,468,000, making the total cost of the conversion and enlargement $13,358,000.

Authorization has been given to erect a 2,500-bed hospital at Camp Knox, Stithton, Ky. The estimated cost is $2,491,600. The various buildings will be of the type which are standard in all cantonments.

A 1,000-bed hospital will be erected at the United State General Hospital No. 20, Whipple Barracks, Ariz. This is in addition to the 300-bed hospital which was recently authorized. The estimated cost of the addition is $1,581,525. This hospital is set aside for the use of tubercular patients. The various buildings now located at this post will be converted for hospital use. There will be erected in addition to the ward buildings a number of buildings for utilities. A total of thirty-one buildings wll be erected. Work is to begin at once and pushed as rapidly as possible.

### On Army Anthropometry.

The Prudential Insurance Company of America, in behalf of the Committee on Anthropology of the National Research Council, has recently published an extended discussion of the scientific and practical aspects of army anthropometry and medical rejection statistics, of special interest and value to those particularly concerned with questions involved in the carrying out of the medical provisions and physical requirements under the selective draft.

The publication includes a review of the recruiting statistics of all the principal foreign countries, and the medical causes of rejection in the different armies, with some brief observations on the corresponding rejection statistics of The Prudential. The investigation brings out the wide variation in the physical proportions of recruits and the urgency of more strictly scientific physical standards. The publication is the result of investigations made in behalf of the Committee on Anthropology of the National Research Council, by Doctor Frederick L. Hoffman, Third Vice-President and Statistician of The Prudential. The publication is for gratuitous distribution to those who have a scientific and practical interest in the subject-matter of the discussion.

# Surgery

## Cecoplication.

Sir William Watson Cheyne and Arthur Edmunds, C. B., M. S., F. R. C. S., observes that in a patient with pain in the right iliac fossa occurring in attacks or as a dull ache, with tenderness at or near McBurney's spot, irregularity of the bowels, and vague digestive disturbances, the diagnosis of chronic appendicitis is usually made. Appendicectomy, in the large majority of cases, leads to relief of the symptoms and great improvement in the patient's general condition.

There is, however, a residuum of cases where this operation fails to relieve the patient, the pain continuing as before. The explanation of this in some of these cases may be, that the appendicitis was only part of a general colitis; in others, that some other organ, as, for example, the ovary or tube, kidney or ureter, was at fault. These symptoms are sometimes loosely diagnosed as due to adhesions. While adhesions may account for pain in this region if they obstruct the passage of the intestinal contents, this explanation will not meet the whole case. Many patients, for example, after a severe suppurating appendicitis, in whom it is certain adhesions are abundant, are perfectly comfortable, while in other cases where the symptoms have been attributed to adhesions laparotomy often proves that none are present.

But even when all such sources of error are eliminated there is still a group of patients which present all the symptoms commonly ascribed to a chronic appendicitis, in spite of the fact that this organ has been removed. These cases, being far from uncommon, have recently attracted a good deal of attention and have been studied by a number of surgeons.

It is pretty generally recognized that in such cases we have to do with some affection of the cæcum, which is usually found to be voluminous and abnormally mobile. This condition has been called by a variety of names, such as cecum mobile, typhlatony, typhlectasis, and voluminous cecum—according to the observer's view of the precise cause of the symptoms—Wilms laying stress on the excessive mobility, Blake on the distension of this part of the bowel.

The three longitudinal bands of the colon are continued on to the cecum, where they meet at the attachment of the vermiform appendix. The innermost of these runs upwards to join the termination of the small intestine, the other two run in front and behind the cecum respectively; between these bands the bowel wall is thrown into a series of irregular sacculations. The bowel wall between the anterior and posterior (or posteroexternal) band usually forms a single simple sacculation which, even when undistended, is larger than those in the other segments between the longitudinal bands.

The cecum primitively formed a symmetrical cone at the commencement of the large bowel, but with the growth of its right wall, especially of the sacculation between the anterior and posterior bands, this organ becomes asymmetrical, its morphological apex, the origin of the appendix, being displaced upwards to the left, the sacculation in question forming a sort of pouch at the fundus of the cecum. This pouch tends to increase in size as life advances, and in many patients, especially in those whose symptoms we are considering, there is a tendency of the cecum to prolapse into the pelvis, especially when it is distended. This prolapse and mobility constitute what is known as "cecum mobile," and are sometimes so marked that an actual volvulus of the cecum may occur. Many surgeons have come to the conclusion that this prolapse and mobility of the cecum are the cause of the train of symptoms we are considering.

The observed facts of physics show that when a hollow structure is distended by gas or fluid, the pressure is equally distributed over its walls, and therefore, with a given constant pressure, the larger this structure the greater the tension on the material of which it is composed. This means that an increase in the lumen of the bowel produces a greater strain on the bowel wall, stretching of its sensory nerves, and consequently pain. Although the strain on the bowel wall is equally distributed, the structure of the bowel is such that this is not equally well borne; the part of the bowel supported by the longitudinal bands being stronger and more resistant than the sacculations; and the large sacculation between the anterior and posterior bands, being the most unsupported, feels the strain most of all.

The cecum seems to be the part of the large bowel which yields most readily to distension. This was well seen in a case recently operated on in King's College Hospital. The patient was suffering from acute intestinal obstruction, due to an annular carcinoma of the pelvic colon. The transverse colon was not distended, but the cecum, which occupied the greater part of the pelvis, was enormously distended and so thinned that it ruptured when an attempt was made to bring it up into the abdominal wound.

That which occurs to such a marked extent in gross obstruction probably occurs also to a correspondingly lesser degree when the distension of the colon is merely caused by atony and constipation; and since, as we have seen, the weakest spot in the wall of the cecum is the space between the anterior and posterior bands, it is just in this spot that we should expect to find the most marked effects. This argument is amply borne out by clinical observations.

Further, this distension of the cecum, involving as it does the retention of its contents, will interfere with the drainage of the appendix and predispose to, if not actually produce, appendicitis. It is not unreasonable, therefore, to expect to find the two conditions existing together, and here again the clinical evidence corresponds.

Wilms, of Basle, considers that the *mobility* is the most important factor. He considers that by its position the cecum drags on its mesentery and indirectly upon the mesenteriolum of the appendix, causing pain by the stretching of the nerves in these structures. On this hypothesis he treats such cases by "cecopexy"—that is to say, fixation of the cecum to the abdominal parietes. At first he recommended that this should be done by simple suture, but in his later paper he advises that the peritoneum of the iliac fossa should be stripped up to form a sort of pocket into which the cecum could be inserted and so held firmly in place. He reports good results from this operation.

Other surgeons, notably Blake and Klemm, consider that the symptoms are due to the *stretching of the bowel wall*, and recommend that the size of the lumen should be diminished by "cecoplication"—that is, by sewing together the anterior and posterior bands.

Cecoplication relieves the stretching of the nerve-fibres in the walls of the bowel by diminution of the size of the lumen of the bowel; hence, a rise of pressure within the colon has a smaller effect on its wall. Further, at the part where the bowel tends to bulge and become thinned a firm buttress of tissue is formed, well adapted to resist this strain, and protect therefore the contained nerve-fibres. Delbet has utilized the formation of this stiffish buttress of tissue to prevent the recurrence of intussusception of the cecum.

The authors are inclined to accept Blake's view rather than that of Wilms, but it may be noticed that each operation fulfils in part the purpose of the other, cecoplication drawing the fundus of the bowel up out of the pelvis and rendering it less mobile; while it is difficult to see how the bowel could be inserted into a retroperitoneal pocket without both reducing its lumen and supporting its wall. Oppel has also realized the value of this method and states that he plicates the wall of the cecum as a routine accompaniment to appendicectomy wherever possible.

When, therefore, a case of chronic appendicitis exhibits a long lax cecum it is a good plan to combine cecoplication with appendicectomy. This adds practically nothing to the risk of the operation, and the post-operative discomforts of the patient are, if anything, diminished, so that there need be no hesitation in performing it in any case.

Blake performs his operation by suturing the muscular bands with a continuous suture of fine silk, each stitch being drawn tight before the next stitch is passed, so that not only is the lumen of the bowel diminished, but also, owing to the puckering of the stitches, the fundus of the cecum is drawn up.

The authors recommend that the operation should be done as follows:

The suture is commenced where the stump of the appendix is invaginated, and they prefer a fine catgut to a silk stitch. The needle is passed through the adjacent edges of the anterior and posterior bands, which converge at this point, and these edges of the bands are then united by a continuous suture extending upwards for three or four inches towards the hepatic flexure. At first the sacculations of the colon tend to bulge between the stitches, but as the end of the suture line is approached this becomes less and less, until, as a rule, the whole lies quite smoothly. If there is any tendency of the bowel wall to bulge over the end of the suture line, this can be counteracted by picking up the bowel wall, between the bands, in the last stitch. The suture is then reversed and carried downwards towards its starting point, this time, however, picking up the edges of the bands which were originally farthest from each other, and the suture is continued until the starting point is again reached. In this way the whole of the bowel wall between the bands is invaginated and held in place by union between the surfaces of the bands which have been sutured face to face. As the result of the operation the bowel is drawn up, and the backwater formed by the sacculation of the cecum is obliterated.—(*Lancet*, June 15, 1918.)

## Aneurism of the Third Party of the Left Subclaivian Artery.

Herbert H. Brown remarks that idiopathic aneurism of the subclavian artery is not common, and until recent years its treatment has been most unsatisfactory. Ligature of the first part of the artery is an operation of considerable difficulty, owing to the anatomical relations of the vessel and its depth from the surface, and in pre-antiseptic times was invariably fatal.

The second part, behind the scalenus anticus, has apparently not often been chosen for ligature; but it is far more accessible than the first part, and the operation is not especially difficult. In the case recorded below, he started the operation with the idea of ligaturing the first part, but found the second part could be more easily reached, and there was no difficulty in ligaturing the vessel. The result of the operation was completely satisfactory.

The patient, a farm laborer aged 50, was admitted to hospital on February 27, 1918, complaining of severe pain in the left arm, which kept him awake at night. There was a pulsating oval tumor extending above the clavicle into the posterior triangle, rather smaller than a hen's egg. The left radial pulse was distinctly smaller than the right. The systolic pressure in the right brachial artery was 230 mm., in the left 195. The patient was kept in bed, given potassium iodide, and morphin at night.

On March 8 an incision was made along the posterior border of the sterno-mastoid, commencing at about its centre, and extending over the head of the clavicle for an equal distance on to the thorax; it was about six inches in length or rather less. The posterior edge of the sterno-mastoid was defined, the muscle drawn inwards, glands, etc., removed, and the internal jugular vein exposed. The attachments of the sterno-mastoid to the upper border of the clavicle, and of the pectoralis major to the lower border, were divided, and the inner half of the bone cleared with a periosteal elevator, the clavicle was divided with a saw, disarticulated at the sterno-clavicular attachment, and the inner half removed. The subclavius muscle was taken away and a large suprascapular vein; the subclavian vein was then exposed and cleaned. After removal of some lymphatic glands the scalenus anticus with the phrenic nerve was defined. It was evident that the aneursim commenced at the outer edge of the scalenus anticus, and was confined to the third part of the artery. The first part had not yet come into view. The phrenic nerve was drawn inwards, the vagus, internal jugular, and internal carotid were also retracted out of the way, and the scalenus anticus muscle divided a short distance above its attachment to the rib.

The second part of the subclavian artery was now fully exposed to view. It appeared to be quite healthy and normal, and there was no difficulty in passing a ligature round it. Two silk ligatures of No. 4 silk were tied sufficiently tightly to occlude the vessel without rupturing the coats. Pulsation in the aneurism and radial artery immediately ceased. The wound was closed after suturing the divided sterno-mastoid and pectoral muscles, and a small drainage tube left in the center of the wound. This was removed after forty-eight hours.

The patient made an uninterrupted recovery. The left arm and hand continued to be quite warm and free from pain. There was never any cyanosis or edema. Muscular movements and sensation were unaffected. He left the hospital within three weeks of the date of operation.

I saw the patient again a month later. He looked and felt perfectly well. All movements of head and arm were normal. He was quite free from pain and was advised to return to work. The radial pulse was still absent; the only trace of the aneurism was a very small soft tumor above the clavicle resembling a lipoma. The systolic pressure in the right brachial artery was then 165 mm.

The operation has apparently been completely successful.—(*Brit. Med. Jour.*, June 1, 1918.)

## Bile Peritonitis Without Evident Perforation of the Biliary Tract.

J. J. Buchanan reviews the history of cases in which bile has been found in the peritoneal cavity without evidence of perforation of the bile tract. He reports one case and tabulates sixteen others. He comes to the conclusion that the condition results from such diverse conditions that no definite disease picture exists.

The author's case was a boy of twelve years, who had had typhoid at two and one-half years; at eight he began to have severe attacks of cramp-like pain in the right upper quadrant, with vomiting of bile and tenderness in the gall-bladder region. When seen he was taken with colic accompanied by vomiting, slow pulse, and slight elevation of temperature. The pain and tenderness was confined to the right side. In forty-eight hours the patient was still vomiting, had a distended and rigid abdomen, and a rapid pulse.

On opening the abdomen a fluid seemingly half bile and half sero-pus gushed from the wound. The intestines were injected, the ascending colon thickened, the appendix red but not more than the rest of the intestines, the peritoneum over the meso-colon and common duct was œdematous, glassy, and green. The wall of the common duct was black and gangrenous. The gall-bladder was tense, red, and full of dark and muco-pus. The common, hepatic, and cystic ducts were not obstructed. No perforation was found in the bile tract, stomach, or duodenum. The gall-bladder was excised, the common duct drained, and the peritoneal cavity mopped out and closed except for the above mentioned drainage. The patient recovered with a fistula which closed in six months, and he has remained well.

The author then cites several cases to show that the peritoneum is very little affected by non-infected bile, but if infected, the bile causes a peritonitis. In discussing the tabulated cases, it is pointed out that the effusions were not tested chemically for bile, but that the physical appearances were such that the surgeons felt justified in assuming it to be bile.

The bile tract was the seat of inflammatory or carcinomatous lesions or stones in thirteen of the sixteen cases, two followed trauma, and in one typhoid ulceration was probably present.

As to the cause filtration through the gall-bladder wall is mentioned, and earlier in the paper some experiments by Clairmont and Von Haberer are quoted in which the common duct was ligated. In four of these cases bile effusion was found without perforation. Microscopic perforation is mentioned but it considered improbable, but a very small macroscopic opening is considered a possibility and one case is quoted in which such a cause was demonstrated. The rupture of subserous intrahepatic bile canals may also be a cause, as was demonstrated in two cases by Nauwerck.

The author suggests postperitoneal perforation with distant rupture into the peritoneal cavity, and quotes a case in which the bile passed up back of the diaphragm between the pleura and ribs, down back of the ascending colon into the pelvis and then along the sigmoid and descending colon.

The author believes that drainage of the common duct after the peritoneum has been dried offers the best chance for recovery.—(*S. G. & O.*, xxvi. 303.)

## The Surgical Treatment of Bronchiectasis.

P. N. Hansen has operated upon 10 patients with bronchiectasis (*Nord. Med. Ark., Stockholm*, 1917). In 7 cases he employed pneumotomy including a more or less extensive rib resection and long drainage. Two patients died after operation, but not as a result of it. Only 1 patient recovered completely; 2 showed marked improvement. He thinks that on the whole incision is rather useless and advises its use only in cases where one large cavity exists.

The author's experience with extrapleural thoracoplasty is that it had no effect whatever on the disease or its symptoms.

In 4 cases he removed the diseased part of the lung. In some of these the other methods had failed. One patient died from pleuropneumonia in the other lung. In this case the lower lobe had been removed. Autopsy showed that there was extensive bronchiectasis in the central lobe which had not been removed. The other 3 patients made as complete a recovery as could be expected.

While thoracoplasty alone is of very little service in bronchiectasis, the author thinks it is quite rational to do more or less extensive plastic work on the chest wall, besides excising the diseased lung tissue.

Robinson of America was the first surgeon to maintain that excision of lung tissue is the only mode of bringing about recovery in bronchiectasis. The author has also obtained the best results from lung resection.—(*S. G. & O.*, July, 1918.)

## Interallied Surgical Congress for Study of War Wounds.

At the last congress, among the modifications of conclusions, were:

1. Disinfection of wounds.—Primary suture has succeeded secondary suture of wounds as a general method.

It has been practiced either at once or as a retarded primary suture (early secondary). It seems that immediate primary suture can be done beyond the limits of time which had been fixed in the case of slight wounds. Delayed primary suture is done in two stages. The first stage consists in mechanical

sterilization by excision of the wound, followed by an aseptic or antiseptic dressing; the second stage, done from one to four days later, is the complete closure of the surgical wound after bacteriologic examination. Among the germs whose presence causes acute severe complications after suture, the streptococcus and the anaerobes, especially the spore-bearing anaerobes, must be given the first place.

2. Use of bacteriology in war surgery.—Under actual conditions it would be premature to give any concise bacteriologic formula as an indication for the closure of wounds.

3. Treatment of gaseous gangrene.—Owing to acidosis, in certain cases of gaseous gangrene an alkaline treatment has been instituted either to permit an ulterior operation in inoperable patients or for disintoxication. This treatment has given encouraging results. A certain number of the wounded have been treated by different specific sera: anti-perfringens, serum, anti-vibrion-septic serum; anti-bellonensis serum. These three sera have proved harmless. The anti-perfringens serum, used as a preventive in a number of cases, seems to have given favorable results. The anti-vibrion-septic and anti-bellonensis sera have given very appreciable results both from preventive and curative standpoints, even in toxic cases far advanced. From these results it would seem advantageous to continue their application.

4. Shock.—In shock three processes must be distinguished: (1) hemorrhage; (2) infection or supra-acute intoxication; (3) true shock.

It is difficult to distinguish these three states. Count of the red corpuscles in the venous blood done in the hours immediately following injury, taking into account the time elapsed since the traumatism, permits the existence of an important hemorrhage to be recognized. The results furnished by this method are not applicable to limb wounds, but a marked fall in the red corpuscles indicates a severe hemorrhage. In such circumstances blood transfusion has been successful. In true shock, warming the patient is the essential element of treatment. It is desirable that all beds allotted for shocked patients should be heated. British surgeons in treating shock employ intravenous injections of solution of bicarbonate of soda, 4 per cent, in doses of 500 ccm. Other saline solutions have not given definite results.

5. Prosthetics of the mutilated.—Experience has confirmed the superiority of apparatus of rigid material (of which that named "American" is the type) over apparatus of reinforced leather when the stump has terminated its evolution. Temporary apparatus, used when the conditions of the amputation wound permit, considerably hastens the maturity of the stump.

6. Surgical treatment of war fractures.—The surgical treatment of war fractures has made very great progress: first, in organization, which includes distribution of the wounded from the first aid post in apparatus such as the Thomas splint to secure immobilization; direct evacuation from the first post to operating centers; multiplication of specialized operating centers; perfect accord between the different services, which permits absolute unification of the treatment in its different stages; secondly, in operative technique. Primary reunion of diaphyseal fractures has been the current practice. The present average is about 51 per cent of diaphyseal fractures, due to shells, primarily united. The following principle sems to be evolved: to transform an open war fracture into a closed fracture, either by immediate primary suture or by delayed primary suture under bacteriologic control. Secondary suture after chemical disinfection, bacteriologically controlled, still preserves all its indications.

7. Articular wounds.—Complete closure is the universally admitted procedure for articular wounds. Its results are such that when the excision of the contused tissues creates extensive cutaneous losses, the breach can be filled by autotransplants. Bone cavities can be filled in certain cases by pediculated muscle flaps.

8. Chest wounds.—The surgical treatment of chest wounds clearly tends toward active surgery. Threatening hemorrhage and open thorax are regularly operated upon. Intrapulmonary projectiles are primarily extracted with direct treatment of the lung wound, according to the general principles of the treatment of war wounds: treatment of the parietal wound, excision, removal of all pulmonary foreign bodies, bone or metallic, cleansing of the wound, and immediate closure of the thorax. The success obtained clearly authorizes this surgery.

Infected hemothorax is treated by very early drainage, progressive disinfection, and secondary closure of the thorax.

Chronic purulent pleurisies are amenable to progressive sterilization with pleuropulmonary liberation by multiple incisions if necessary.

9. Craniocerebral wounds.—Wounds of the brain are mechanically disinfected by trepanation, followed by cerebral lavage with warm saline, and extraction of easily accessible projectiles. Bacteriologic control, here as in all infected wounds, indicates the possibility of complete closure. In cases where the foreign body cannot be extracted, primary closure, either immediate or deferred, should only be done with extreme prudence. The greatest circumspection should be observed in the application of plastics.—(*Int. Abst. Surg.*, xxvii, 1.)

## New Methods in the Treatment of Tuberculosis Osteo-Arthritis of the Knee Joint.

Perera says the use of immobilizing bandages is indicated only in arthritis with an acute onset, in painful arthritis, in tuberculous hydrops with notable œdema and in fungous synovitis, (*Prof. de los clin.*, Madrid, 1918, vi, 57.) It is contra-indicated in abscesses and after any surgical operation. For correcting a vicious position traction and massage of the muscles is employed. Celluloid is the best material for immobilizing the joint. Plaster is one of the worst materials and the fenestrated cast is especially bad. Its indications in connection with injections or roentgenotherapy are extremely limited.

Functional rest should be rigorously insisted upon without fear of ankylosis.

Of the various substances injected into the articulations or with abscesses the author recommends only iodine associated with olive oil, glycerine or creosote. They are useful in fistulous tracts and deep abscesses; but the quantity should not exceed 40 ccm. They are contra-indicated in acute processes and when there are multitple abscesses.

Various other injection substances recommended in literature have been tried and have been proved useless or harmful.

The treatment by exposure to sunlight in clear and cold air, if the patient's state does not contra-indicate it, gives the most positive results in this disease. In 80 per cent. of closed bone lesion heliotherapy however does not stop the tubercular process and in 20 per cent. of the cases it aggravates it. This type calls for an open operation. Heliotherapy cures open bone lesions. In closed synovial lesions heliotherapy cures; it takes much time especially in adults and there may be cases in which it aggravates. In open synovial cases heliotherapy may cure, but it does not aggravate. In cartilaginous and multiple lesions either closed or open, heliotherapy is the only treatment that cures, whether the case is incipient or old.

With regard to operative procedures, extra-epiphyseal tuberculous foci when existing ought always to be excised. Typical resection is only a means of last resort in children; in adults it is preferable to amputation. Arthrectomy ought to be done in the beginning of a pure synovial lesion.

These remarks apply to other joints as well as to the knee.—(*Inst. Abst. Surg.*, July, 1918.)

## Treatment of Soft Sores and Buboes.

For the last two years Goubeau has had excellent results in the treatment of soft sores and buboes by the local application of arseniate of soda to the former and by injections into the latter whether suppurating or not.

In the case of sores, these are first cleansed carefully and thoroughly with small swabs soaked in ether, until no pus remains in the crevices. The whole surface is then painted over by means of a small soft brush or a small swab with an emulsion of arseniate of soda in absolute alcohol (1 in 50). The alcohol is allowed to evaporate, which can be hastened by pumping a curent of air on to it, or blowing through a small tube, leaving a fine coating of the arseniate on the surface. The jet of air will carry this into the crevices. A second application is made directly afterwards, and when this has dried the sores are covered with a little aseptic gauze.

For the ordinary chancroids, Goubeau makes one application each day, but in the case of those exposed to soiling by urine or fæces, he advises that two should be made, preceded by the careful cleansing with ether. As a rule in simple cases only, four or five daily applications are needed to change each of the sores into a small wound, healthy-looking, red, and smooth, which tends to heal up quickly. The application of the arseniate should, however, be kept on with until all traces of pus have disappeared, when it can be replaced by iodoform.

In the case of buboes, which have not become suppurative, he injects into the swollen gland 1 or 2 cc. of a 1 per cent. aqueous solution of the arseniate. This is repeated, if necessary, every second day. When pus is present, this is emptied out by means of a small trocar, and then an injection of 2 cc. of the 1 per cent. solution is made. The puncture and injection are repeated every day or every other day, as found necessary.

In the case of an open bubo, the cavity is cleansed with ether in the same way as the sore, the alcoholic emulsion is applied, and a sterilized gauze dressing applied. Latterly, Goubeau has made us of an emulsion formed by mixing equal parts of ether

and the watery solution of the arseniate, and has found that the length of treatment has been shortened appreciably.

The average length of treatment of simple sores and of non-suppurative buboes has been 18 days for suppurating buboes and open buboes 27 days, and for sores under the prepuce with phimosis and needing circumsion 29 days. Some of his cases treated successfully in this way had already been under treatment by other methods for weeks and even months previously. —(*Journ. de Méd et de Chir. prat.*, April 10, 1918.)

## Nyulasy, Polypoid Decidual Endometritis.

The first case of this condition was described in 1861 by Virchow, says A. J. Nyulasy. Since then various observers, notably Ahlfield and Nyulasy of Melbourne, have demonstrated the condition to be rather common. Syphilis is the most potent cause, thought any low-grade irritant extending over a long period, such as the gonococcus or the common pyogenic cocci, may also act as an etiologic factor. It is a disease of the decidua, and may or may not lead to abortion; many of the typical cases occur after full labor.

Clinically it presents two types: either a tough, somewhat rounded polypoid eminence of various sizes, or leathery papillomatous outgrowths. There is a marked tendency toward infective changes. The symptoms may be abortion, adherent placenta or sepsis after the full-term placenta has come away perfectly clean. In such cases septicemia may come on without noticeable fetor of the lochia, the patient having been apparently well and free from any premonitory symptoms.

Retarded involution with a patulous os admitting one or two fingers should be carefully watched, and the unduly large uterus explored under anæsthesia and the diseased decidua removed. This will prevent fatal septicæmia.

In the treatment the sharpest curette should be used for removing the decidua. The author found the bare finger nail a good aid to the curette. After curettage the uterus is packed with iodoform gauze, and in some cases intra-uterine douches are used for several days. On account of the enormous venous sinuses hemorrhage may be very severe; this necessitates packing and another sitting. In an obstinate case it was necessary to do an anterior vaginal metrotomy to faclitate the removal of the decidua. The author has not lost any cases, unless grave septicæmia was present at the beginning.—(*Surg., Gynec. & Obst.*, 1918, xxvi, 331.)

## Didelphic Uterus and Pregnancy; Torsion of the Gravid Cornua.

Mazzini reports (*Semana méd.*, xxiv, 630), the case of a primipara aged 22 years, with an unimportant previous and family history. She entered the hospital dyspnœic, pallid, with the abdominal facies, and discolored mucosa. Temperature was 35°, pulse 120 to 130. The tongue was dry, there was intense thirst, pyrosis, and vomiting. The abdomen gave the impression of a pregnancy at term. The fundus of the uterus showed in the hypochondriac region and left flank. The uterus was irregularly triangular in form. Its height was 33 cm., which did not agree with the state of the pregnancy, in the beginning of the seventh month. The upper segment gave a wooden dullness on percussion. In the lower third palpation was impossible owing to distention and hyperplasia. The patient stated that the uterus had commenced to increase two hours before her entrance into the hospital.

Examination showed a septum commencing at the vulva and continuing upward, giving the appearance of two vaginæ. Palpation discovered in the right vagina a vague and interrupted sensation of continuity between it and the neck of the gravid uterus in left lateroflexion. A diagnosis of didelphic uterus was made.

A median sub- and supra-umbilical laparotomy was done. The gravid hemi-uterus proved to be of a volume corresponding to term, of an intensely livid color and with a torsion of 180°. The left hemi-uterus was in forced lateroflexion. The gravid uterine horn was removed. The cervico-utero ligamentous pedicle was sutured and peritonized. Peritoneal phenomena persisted for 72 hours. Cicatrization was my first intention. The patient was up on the twentieth day.

On opening the tumor, about 500 ccm. of serohæmatic fluid escaped; the fœtus corresponded to the month of the pregnancy. On extracting the fœtus it was seen to be well developed. —(*S. G. & O.*, July, 1918.)

"My firm opinion is that sanatorium treatment for tuberculosis is without doubt, the best, not only in the interests of the community but, in properly chosen cases, also of the individual patient."—*Sir* A. DOUGLAS POWELL.

# The Physician's Library

**Genito-Urinary Diseases of Syphilis,** by Henry H. Morton, M. D., Professor of the Long Island College Hospital, etc.; 4th edition, with 330 illustrations and 36 full page colored plates. 807 pages; $7.00; St. Louis: C. V. Mosby Co., 1918.

We recall no book in recent years which has changed so strikingly between editions as has this favorite text book on urology. In other days we considered Morton's book one of the most practical in the field, and the reader is, therefore, astounded to see the fourth edition and to observe the improvement on its predecessors. No. 3 had 200 pages less and is not to be compared with No. 4.

The latter is not only splendidly printed and illustrated on the best paper, but there is a complete metamorphosis in the text. The new Morton has no superior in the urological field for the physician. The field is covered with exactness beginning with turbid urine and going through the methods of diagnosis with instruments of precision, the diseases of the penis, venereal conditions, all the ailments of the prostate, bladder, kidney, testicles and scrotum to syphilis of the various parts of the body, with its diagnosis, prognosis and treatment.

The book is based on the author's wide hospital and private practice and every fact is presented from the practical standpoint. Morton has written this book as the teacher discusses his subject with his class. As a result he who runs may read. The general practitioner has in this work a treatise to which he can ever turn for assistance and information.

Morton is one of the country's great urologists; modest and retiring in demeanor, but possessing all the qualifications which make the successful operator and teacher. This book demonstrates his fitness as an author as well and we bespeak for this new edition generous support on the part of the profession.

**Anatomy of the Human Body.** By Henry Gray, F.R.S., twentieth edition revised by Warren H. Lewis, M.D. of Johns Hopkins University; cloth, $7.50; leather, $9.00. Philadelphia and New York: Lea & Febiger, 1918.

The twentieth edition of that old friend of the youth of all medical men. Gray's anatomy has made its appearance under the revision of Dr. Lewis of Johns Hopkins. This book first appeared 60 years ago and the numerous revisions demonstrate the advances made in anatomical science during that time. There has been some rearrangement of the text and many additions which were necessitated by our newer knowledge of physiological anatomy, laws of bone architecture and the mechanics and variations of muscles.

Other subjects have been handled in a different manner than in previous editions. In short this revision gives the profession the very latest in anatomical knowledge.

Gray will doubtless continue for many years to come to be the leading book on the subject in any language as it has been for generations. In typography and illustrations the work leaves little to be desired.

**Materia Medica and Therapeutics for Nurses.** By John Foote, M. D., of Georgetown University. $1.75; Philadelphia and London: J. B. Lippincott Co., 1918.

This is a useful book for nurses, because it covers a wide field briefly and succinctly. Its comprehension would give the nurse a broad view of the situation from the standpoint and should enable her to carry out her work in the subject to the eminent satisfaction of the physician.

**Medical Service at the Front.** By H. Col. John McCombe and Capt. A. F. Menzies, C.A. M.C., $1.15. Philadelphia and New York: Lea & Febiger, 1918.

This book discusses the regimental medical officer, the field ambulance (our field hospital) and other factors of interest to the army medical officer, as it is based on Canadian and British ideas, an American might be misled if he followed its teachings in toto but the fundamentals are the same. The work is interesting and instructive.

When chronic tuberculous glands with periadenitis are treated, they may disappear entirely or they may only become smaller and be reduced to fibrous nodules which do not entirely disappear.

Holding states that the ultimate effect of X-rays on lymphatic structures is to replace the lymph tissue with fibrous tissue.